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VOL. VIII 1899 NEW SERIES

THE
OPHTHALMIC RECORD

A Monthly Review of the Progress of Ophthalmology.

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THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JANUARY, 1899. NO. I. NEW SERIES

ORIGINAL ARTICLES.

A CASE OF LEUCO-SARCOMA OF THE CHOROID IN A CHILD.

BY WILLIAM MERLE D'AUBIGNÉ CARHART, M.D.

Assistant Attending Surgeon, Manhattan Eye and Ear Hospital; Instructor in the New York Post Graduate Medical School; Ophthalmic and Aural Surgeon, Peekskill Helping Hand Hospital, etc.

NEW YORK.

Illustrated.

Thomas F., aged 4 years, was brought to the Manhattan Eye and Ear Hospital on August 23d, 1898, with the following clinical history:

One year ago the mother noticed a white appearance of the pupil of the patient's right eye, and soon afterward she realized that the child was blind in that eye. She is quite sure the child could see out of both eyes during early infancy, and he seemed to be fairly healthy, although never robust and strong, until last January, when he had an attack of cerebro-spinal meningitis. About that time the eyeball began to protrude perceptibly, but no particular pain in connection with the eye was observed. The child's general health, however, was much shattered by the illness in January, and he began to lose flesh and strength. During the past two months the protrusion of the eyeball has advanced rapidly, and considerable pain is apparently felt by the child in the eye itself.

On admission, the right eye is seen to protrude from its socket in a very marked manner and to be considerably enlarged. There is much congestion in the conjunctiva, and the lids are tense and swollen. The cornea is quite hazy and denuded in places of its epithelium, while behind the widely dilated and fixed pupil, an opaque lens presents itself covered with inflammatory exudate. The tension of the eye is somewhat elevated, although not markedly so. Palpation reveals a mass apparently situated below and to the outer side of the eyeball.

The general condition of the boy is not at all good, for he is poorly nourished and feeble. He is peevish and irritable with almost a cephalic cry when disturbed, while if left quiet he seems to have a tendency to stupor.

As these symptoms point to decided systemic disturbance, with possible meningeal involvement, grave doubts arise as to the proper method of treatment. A diagnosis of malignant tumor is evident, but whether there is extension of the malignant process to the brain or elsewhere is not so plain, nor whether, if such extension has occurred, operation is justified in the present enfeebled condition of the child for a merely palliative result. The mother is told of the serious nature of the tumor and that an operation may possibly only prolong the child's life a short time, and with these facts, she is sent away to think over what she will decide to have done. She returns within a week with request for operation. On August 30th, under ether anæsthesia I enucleated the eye, finding a large mass of firm, dense, tumor tissue adherent to and springing from the outer, lower, posterior quadrant surface of the eyeball. The tumor surrounds the posterior hemisphere of the globe, involving the optic nerve, but its chief bulk extends outward, forward, and downward toward the malar bone. All of this tumor tissue was thoroughly removed, and the orbit was eviscerated of its contents down to the periosteum, a sharp curette being carefully used with the finger as a guide, and the optic nerve being severed as far within the optic foramen as possible. Considerable, but not excessive, hemorrhage occurred, which was easily checked by packing the orbit with iodoform gauze upon the completion of the operation. The tumor itself did not seem to be vascular to any great extent. The patient's condition during the operation required rapidity of work and necessitated some stimulation, but recovery from anæsthesia was uneventful and prompt. A very gratifying change was seen within a few days in the general health of the boy. The tendency to stupor passed off, and there was little or no irritable crying, with entire freedom from pain. The child seemed much brighter and stronger in every way, and within two weeks was thought well enough to leave the ward and to report daily to the dispensary for the necessary dressing. The orbit has been loosely packed with iodoform gauze and covered with a light pro-

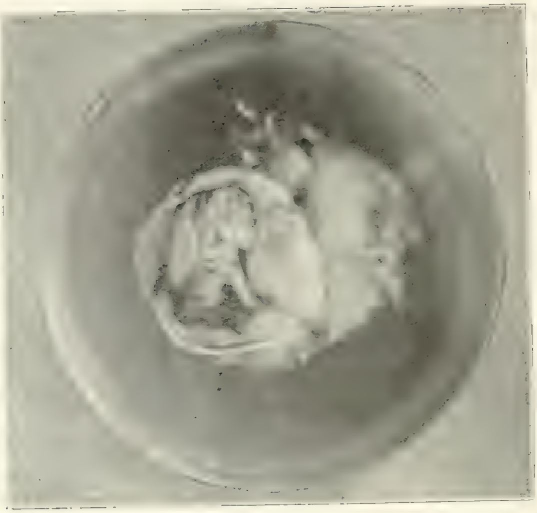

FIG. 1.

Gross specimen showing sarcoma breaking through sclera.
(Actual size.)

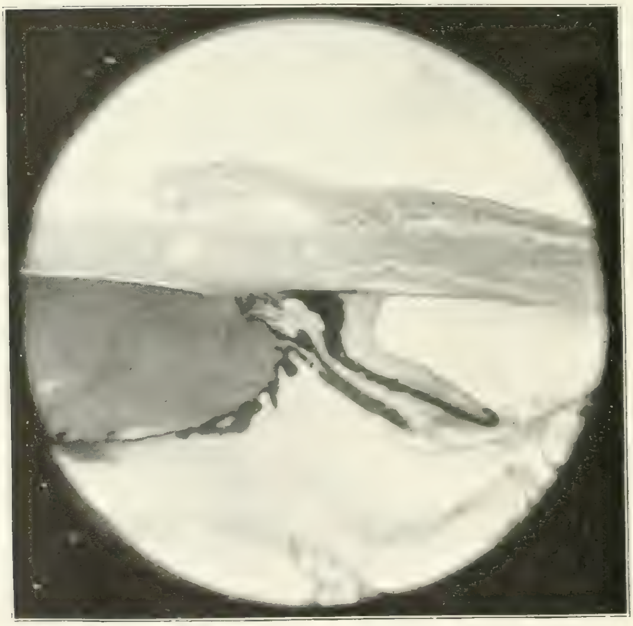

FIG. 2.

Section showing ciliary body full of sarcoma cells, peripheral adhesion of iris and infiltration of corneal layers. (x 15) tective dressing, and has been kept clean by occasional spraying with bichloride solution. The orbital cavity has become partially filled with healthy, smooth, granulations, and no tendency to recurrence in the orbit has so far been noticed, although of course but a short time has elapsed since the operation.

I have asked my friend Dr. E. S. Thomson, one of the pathologists of the Manhattan Eye and Ear Hospital, to examine the specimen removed, and he has kindly given me a very complete report of his examination with two excellent photographs, one a micro-photograph, and the other of the gross specimen, showing very well the extent of the tumor. The following is his report:

Globe slightly enlarged. On section shows following points:—deep anterior chamber; beginning opacity of lens; inflammatory exudate around lens on all sides, especially near ciliary body; pupil widely dilated; iris adherent to cornea at periphery, blocking up filtration angle; vitreous chamber containing totally detached and degenerated retina, in which are numerous calcareous granules; choroid infiltrated with tumor mass as far forward as ciliary body, which is also infiltrated. The tumor mass is white, and is covered anteriorly by the choroidal pigment. It penetrates the sclera, which is much thinned, at the infero-temporal division of the posterior hemisphere. A large mass of tumor tissue lies outside of the globe. In places the tumor mass shows calcareous degeneration. The optic nerve is also involved in the tumor. (Fig. 1).

Microscopical examination shows the tumor to be composed of small round cells of young connective tissue type. There are numerous blood vessels with poorly developed walls running through the tumor. These round cells are present in almost all the tissues of the eye; the ciliary body is so entirely filled with them as to show no trace of its original structure; the ciliary anastomosis contains large numbers of round cells which entirely fill the canal of Schlem and run through the iris and cornea and into the episcleral tissues and conjunctiva. (Fig. 2).

The remains of the vitreous lie immediately behind the lens, and there masses of fibrin in the anterior chamber covering the iris.

The tumor springs from the choroid and is non-pigmented.

Diagnosis:—Small round cell sarcoma of the choroid.

Prognosis:—Absolutely bad.

The case I have made the subject of this article seems to me to emphasize the advantage, in some instances, of operating upon apparently desperate cases, even .if the result should prove only palliative. The prognosis in my case is "absolutely bad" according to the report of my friend Dr. Thomson, and I must admit the possibility, or even probability, of a recurrence of the malignant growth, if not in the orbit, then in some other part of the body. I hope such an unfortunate circumstance has been prevented by the very free removal of the contents of the orbit, but even if a recurrence in an inaccessible locality or in repeated instances should finally cause the death of my patient, I believe the primary operation to be abundantly justified by the history, since the boy is in comparatively good health at the present time and has had seven weeks of complete relief from the symptoms caused by the presence of such a large tumor. When the operation was performed the child seemed liable to die in a few days, and several of my associates doubted the advisability of an operation, from fear of a fatal termination at that time or soon after, hastened by the operation. By good fortune these fears proved groundless, and the child was distinctly benefited by the operation. How permanent the good results will be is still undecided.

252 Madison Avenue, New York.

ACUTE COLOR BLINDNESS.*

BY A. J. ERWIN, M.D.
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Color blindness, as a rule, is a congenital defect, which may be located in the optic nerve end organs, the photo-chemical substance of the retina, in the optic track, or in the cerebral cortex, but wherever it may be located, the microscope has not yet found for it a pathology, and its nature remains inscrutable, unless Donder's theory of the evolution in stages of the visual sense be true; he suggested that the lowest types of animal life may have only perception of light and shade, the next stage such vision as is had in red blindness, the next as in green blindness, a higher class with perfect vision with low chromatic sense, and finally normal vision in the perfect animal; and that the different forms of color blindness are simply retrogressions to one or other of these earlier types. But speculation of this kind has little weight in our day of material accuracy. Instead of having a theory now for every inscrutable condition as our fathers had, we have learned to say that we don't know the things that we have failed to find out. So I may truly and freely say that we do not know the real nature of the lesion, or defect, which causes color blindness; not even in acquired color blindness—the special subject of this paper—have we any knowledge of its pathology. But it is not the purpose of this paper to enter upon the study of achromatopsia, but rather to give an account of two rare and interesting cases, the only cases of acute total color blindness that I have ever seen. They came to me within four days of each other, and were evidently the effect of the same cause. These patients lived on adjoining farms, but were not related.

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*Read before the Academy of Medicine, Mansfield, Ohio, October 31, 1898.

Mabel G., age 13, and Bell S., age 14, consulted me first on January 10 and 14 respectively. Each had total color blindness of both eyes, extending over the entire fields; their acuity of vision and form sense were also somewhat reduced; they had photophobia and blepharospasm, the bulbar conjunctiva hyperemic, and the pupils myotic; their visual fields were from a third to a half reduced for white, tension and refraction normal; ophthalmoscopic examination showed slight congestion of the entire fundus, including the papilla, deeper about the fovea; the congestion of the discs was not sufficient to efface their margins, apparently only superficial, no turgescence of the vessels, the vitreous and other media were clear. In addition to these local conditions, Mabel had vertigo and nausea, Bell had severe headache and nausea. These systemic disturbances in each disappeared in three or four days. Each reported that her eyes had been sore for about three days before coming to me, the sight failing more each day. January 23 Mabel began to have slight perception of all colors in each eye, by the 28th her color sense had entirely recovered, but she had some dullness of sight, contraction of the fields, and asthenopia for a fortnight longer. Bell began to have peripheral color perception in her right eye by the 24th, and in the left eye by the 27th for all colors, but central color scotoma were several weeks in disappearing. They both returned to school about February 1st. They were able to read slowly during the whole term of their color blindness. They said the letters were as white as the paper, but still they could distinguish their forms. A shawl worn by Mabel was colored in white, black and red squares of an inch in diameter. They could see the squares, but all appeared white, and so with each of the colors; everything seemed white. The cause of these attacks of achromatopsia seemed to be exposure to the bright light of the sun on the snow. In other words, these seem to be peculiar cases of snow blindness. The girls were sure this was the cause of their color blindness. At the time the weather was dry and clear, and the sunlight very bright. The snow was covered by an icy crust, which made a very dazzling reflection. The girls walked a mile and a quarter and a mile and a half respectively to school daily. Their hats gave no protection to the eyes, and they were of rather delicate constitutions and lightly clothed. I was quite convinced, in the absence of any other assignable cause, that they were cases of snow blindness, affecting especially the retina, and yet I have not been able to find any record of total color blindness from snow exposure; in fact, even partial achromatopsia is not a common symptom of snow blindness—the chief symptoms of which are corneal, conjunctival and retinal congestion, with resulting photophobia and ciliary pain, with some obtunding of the acuity of vision. Noyes, speaking of hemeralopia and snow blindness, says prolonged exposure to bright light will occasion torpor of the retina or the opposite state of exalted sensibility. Color sense and peripheral sight will be reduced in certain cases, but often not at all. "Snow blindness is a mixed condition, consisting of an intense photophobia, spasm of the lids, conjunctival and corneal irritation, the bright glare and severe cold combine to cause this condition." Wells, in speaking of snow blindness, says the impairment of vision is chiefly due to the diminution of the sensibility of the retina from the great and prolonged glare of the snow, but does not mention color blindness as a symptom; but in hemeralopia, a kindred condition caused by exposure to bright light, he says the power of distinguishing colors may be impaired. Förster, in the same relation, has seen cases in which white, yellow and green were more readily distinguished than blue, violet and red. Mittendorf speaks of partial color blindness in connection with disease of the optic nerve, but does not mention it as a symptom of snow blindness. Meyer says: "In almost all cases of optic atrophy the patient loses the power of distinguishing colors. This insensibility is first observed for the green, then for the red, next for the yellow, and finally for the blue." In speaking of retinal anæsthesia, he says: "It is characterized by diminution of central visual acuteness, the field is always abnormal and very much contracted, chromatic anomalies are never absent, sometimes the patient ceases to recognize some one or more colors, sometimes the color blindness is absolute." He further says, "Retinal anæsthesia almost exclusively affects women and children, generally persons who are anæmic, nervous, or hysterical, or who are convalescent from some serious disease," but he does not mention exposure to bright light as a cause of anæsthesia, nor does he speak of retinal anæsthesia as a factor in snow blindness, and yet his description of the symptoms of retinal anæsthesia tallies well with the condition of my patients. Fuchs speaks of "snow blindness as a keratoconjunctivitis with myosis," but does not mention disturbance of the color sense as a symptom. He speaks of acquired color blindness as "due to disease of the retina, or optic nerve, or of the center for color sense in the occipital cortex." de Schweinitz gives about the same group of symptoms for snow blindness as Fuchs, and adds restriction of the visual field and hemeralopia, but does not speak of color blindness as a result. In his discussion of anæsthesia of the retina, which he believes to be only a part of a general neurosis, he makes mention of the contraction of the visual and color fields as characteristic symptoms, but does not speak of light dazzling as a cause. Thomson, in his article on color blindness in Norris and Oliver's System of diseases of the eye, remarks, "Acquired color blindness is frequently found in diseases of the optic nerve," and gives the procession of disappearance of the different colors in typical optic atrophy, and further remarks "that besides these chronic nervous diseases, acute infectious diseases like typhoid and typhus fevers, malaria and erysipelas may be followed by defects in color perception."

I have not taken the time to look up the literature of acute acquired colored blindness, but you will observe from the quotations that I have made from the leading authorities on eye diseases that they do not make mention of total acquired color blindness except in atrophy of the optic nerve, which is a permanent chronic condition. They concur in the opinion that anæsthesia of the retina is frequently accompanied by partial color blindness, and that anæsthesia of the retina may be caused by light dazzling, and they further agree that in snow blindness there is frequently anæsthesia of the retina, so by putting these conclusions together we have some authority for the opinion that snow blindness may cause color blindness by producing anæsthesia of the retina, which, I take it, was the condition in my cases. The rareness of acute total color blindness is shown in the fact that not one of the authorities cited contains a chapter or even paragraph directly on the subject, nor have I ever seen a case of acute acquired color blindness in my capacity as oculist to the Pennsylvania Company for the past thirteen years for all of its Ohio lines, requiring frequent examinations for color blindness of large numbers of men. My treatment in these cases was cold applications at first and later galvanism and strychnine.

CORNEAL ULCERS.

BY JOHN F. WOODWARD, M.D.

NORFOLK, VA.

In presenting the cases recorded below, I do not wish to open a discussion of corneal ulcers, whose etiology, pathology and symptoms are so well known, but simply to record several interesting cases, the treatment used in each, and the results.

Case 1. Mr. W., age 45, came to my office on March 15, 1898, having fallen over a chair, striking his left eye against the corner of a dry-goods box. His history was good, never having to consult a physician.

Status præsens: The blow was a glance one and did not break the skin, though the contusion was considerable, and the swelling was prompt. A drop of a 10 per cent. cocaine solution was followed by a douche of saturated sol. of boric acid, when I could see that the lower two-thirds of the superficial cornea was scraped off. I used a 10 per cent. orthorform salve and sealed the eye up. The pain was intense for a few minutes, and then he suffered no more until next day. He recovered rapidly and suffered no pain except a neuralgia about the left side of his face.

March 25 he had a severe attack of pain in the injured eye. I found the same raw surface as at first. The macerated epithelium was wiped off with a 1-4000 bichlorid sol., using holocain to prevent pain. He recovered promptly.

April 15 Mr. W. had another "break-down," as he called it. This time I scraped the surface under antiseptics, and in a week he was all right, with a smooth corneal surface.

May 2 he had a similar experience, and the pain was intense, radiating over the side of the face and to the back of neck. I used the cautery, and at no time did I destroy any of the corneal substance proper. The eye did well, and the salve controlled the pain.

June 1: He had begun to rejoice at his recovery, when the cornea sloughed again. This time I used subconjunctival injections of sodii chloride, and carbolic acid to the corneal ulcer. Atropia was put in the eye and pupil dilated *ad maximum.* I examined the nose and found that my patient had atrophic catarrh of twenty-five years' standing, and was now in a very bad condition. This I treated vigorously with much comfort to the patient. My patient did well and I did not see him until about the first of July, when his cornea broke down worse than before, the conjunctiva chemotic, the lid swollen and the pain intense, radiating down the spinal cord. The superficial cornea formed over, the old ulcer peeled off and a real ulcer formed. Nothing seemed to relieve his pain, so I examined the border of the lower orbit, thinking that the blow might have compressed some of the bone, but found it all right. After two weeks it seemed to heal all right, and I did not see him until August 22, when the eye was worse than ever, and pain so intense that the patient was almost crazed. The T. was slightly increased, so I performed paracentesis several times, but with only temporary relief. He fell off from 175 to 165 and then to 150 pounds, and was a most pitiable nervous wreck. The ulcer would not heal under any treatment, although it did not spread, as the upper quadrant was clear. The pain was excruciating over left eye, back of neck and down the spine. I had had him on full doses of iodide potash and strychnia at different times, but he seemed hopelessly out of order, and the discomfort seemed all out of proportion to the size of the ulcer. He begged me to take the eye out, but I refused, until a few days later he took to bed and seemed to be an ill man, when I removed the eye at his earnest solicitation. He recovered promptly, after seven months of suffering.

Case 2. Major W., aged 54, came to see me in April, 1898, with a deep excavating marginal ulcer of left eye. I scraped the ulcer and used 1-1000 bichlor. to polish the scraped surface; gave salve of orthorform gr. 5, aristol, gr. 3; lanoline, 1 dram, and sealed up the eye. In a week he went home in good condition. In July he returned in as bad a condition as at first. This time I used the cautery and the same salve, and, contrary to custom, used atropine. I found that he had a bad case of hypertrophic nasal catarrh. This I treated regularly, and in two weeks the patient was well, and up to this time has had no more trouble.

Case 3. W. H., aged 50 years, came to me in August, 1898, with a cut across the cornea by a blade of fodder; the wound extended along the whole breadth of the cornea and to Descemet's membrane; pus had formed in the anterior chamber and he was suffering very much. I used a 1-5000 warm bichloride sol. to cleanse the wound and gave a 15 per cent. orthorform salve, including a small amount of iodol, and put on compress bandage. He suffered no more pain and has some sight, though a very dense scar.

Case 4. M. J., aged 24, came to me with a large central corneal ulcer which was giving him much pain; in fact, he left another oculist to consult me because he suffered so much pain. He had hypertrophic nasal catarrh with profuse secretions. I scraped the ulcer, treated the catarrh, and used the same salve in his eye that I had used in the others. He suffered very little more from the pain, and in three weeks the eye had healed. In these cases I generally put on a compress bandage for at least four or five days.

These cases are not new, and the nasal catarrh feature has been recognized for several years, though probably not appreciated as it should be. Corneal ulcers are unsatisfactory to both the doctor and the patient ; the results are uncertain and the treatment as variable as the nature of the different cases. Relief from pain and preservation of the corneal surface are the objects aimed at. In such cases *orthorform* seems to be worthy of our consideration, especially where the cornea has been scraped, or cauterized. Its combination with aristol, or iodol, gives an antiseptic salve, and the use of lanoline aids the gaining of its maximum anæsthetic property. Though the conjunctival surfaces are recognized as receptacles for bacteriæ, it is not enough to render them aseptic, as the septic condition made possible through the tear duct is now too well known to neglect this channel of infection. Also, if you render the patient comfortable you have gained much, as it is the discomfort that causes the patient to interfere, and reinfect the eye.

35 Granby Street.

THE DETECTION OF SIMULATED MONOCULAR BLINDNESS.

BY PERCY FRIDENBERG, M. D.

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In countries where obligatory military service or conscription forces all those capable of bearing arms into the ranks of a standing army, exaggeration of actual visual defect, or, more often, feigned loss of sight, has ever been a common means of attempted escape from irksome duty, and regimental surgeons and recruiting officers, rather than civilian physicians, had occasion to acquire experience by the great majority of these cases. "Such roguery," says Himly,[1] "you shall see most oft in young lads who perforce must serve with arms, soldiers ordered to the field of battle, idlers who fain would live at ease in spitals, and at times, too, in boys who shun school, and madcap girls constrained, beyond their liking, to knit and sew."

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[1] Erkrankungen und Missbildungen, etc. Vol. I, p. 33.

Our political institutions and the social conditions of the country in which we live practically eliminate the classes mentioned from the scope of our consideration, and yet here, as well, we meet and must deal with deceivers and frauds not a few. Their ranks are recruited, in this era of mental stress, by the degenerate, the hysterical, the neurasthenic, and the sufferers from some one of the group of traumatic neuroses, whose claims of recompense for damages or of insurance money, after accidents, are fruitful sources of litigation. The ophthalmologist whose services as an expert are retained in such a suit at law has at the same time a grave responsibility and a great opportunity, for his skillful use of methods of examination and the questions suggested by his special knowledge may unmask and bring to justice a cunning impostor, or again, surely no less gratifying a consummation, clear from suspicion and fortify in his just demands the victim of accident or of intentional violence. The task set is frequently a difficult one; the circumstances unfavorable to calm and exact observation, as the examiner is himself to a certain extent, as it were, on trial, and liable at any moment to be interrupted, or to have all advance barred by objections, should his methods, however correct technically, seem even to trespass upon the rights of the subject, so carefully safe-guarded by the rules of civil procedure, so jealously watched over by his legal adviser.

Nor is the mental attitude of the subject, mistrustful, antagonistic, perhaps even doggedly perverse, or worse still, forewarned and schooled for such tests as he may be expected to undergo, calculated to aid in eliciting the truth; while on the other hand, an impulsively and gratuitously corroborative witness may cloud the clearest proof with the suspicion of pre-arrangement. In forensic practice, too, our choice of a simulation-test is further limited by the all-important consideration that we must not only satisfy ourselves, but convince others, and demonstrate by the statements evoked from the witness, the actual condition of affairs. Ophthalmoscopic examination, pupillary tests, the use of mydriatics and determination of refraction, must in most cases be eliminated, some on account of technical difficulties, others for reason of jurisprudence. Still we shall find that among the many tests devised, one or the other will in the end lead us to our goal, and that no deception, however skillful, can prevail against the thoroughly prepared ophthalmologist who has mastered the subject and learned how easily and rapidly the procedures may be varied and modified to meet not only the requirements of different cases, but the exigencies of the moment in the individual case as well.

In almost all instances the claim of monocular amblyopia only is made, as this condition is more easily feigned than loss or deterioration of vision in both eyes. The great majority of detection-tests aim at producing an admission of binocular vision, or a physiological act inseparable from it; the former without the subject's knowledge, the latter independent of his will. The basis of such tests is the fact that we do not analyze visual impressions in such a way as to recognize, at once, which eye is the perceiving one, and further, that we are unaware of, or habitually overlook the fact that we receive two images of each object, which, falling on corresponding points in the retina of either eye, are translated, in cerebro, into their real significance. If the light rays entering one eye are deflected from their course, so that the images of the object now occupy non-corresponding retinal points, they will no longer be fused in our consciousness, but will produce diplopia. The use of prisms in the detection of simulation rests upon this presumption of binocular vision, and upon the hope of an admission of seeing double images by the subject. Originally suggested by Von Graefe, in 1865, it was found, scarcely two years later, that simulants had become conversant with it, and denied that they saw double. To meet this the test was modified so that the edge of the prism bisected the pupil of the supposedly normal eye, allowing some rays to enter unaffected, and deflecting others, so as to produce monocular diplopia, to accustom the subject to double images. This preliminary exercise having been completed, the simulating eye is, as if by accident, uncovered, while, by the very slightest motion, the prism in front of the other is displaced so as to cover the entire pupillary space. If diplopia is still present it is, of course, binocular. Not infrequently, however, simulants will consistently deny the perception of double images, so that the prism test proves only their disingenuousness without actually demonstrating binocular vision. The test may also be vitiated by the difficulty of bisecting with the prism edge an unusually small pupil, especially if the subject, intentionally or otherwise, moves his eye, or the examiner's hand be at all unsteady. To obviate this difficulty Froehlich[1] employed a prism of Iceland-spar, which in all positions produces a double image, while Monoyer and others have ingeniously combined prisms so as to allow monocular triplopia, or still greater complexity.

This method is, however, not well adapted to public demonstration, and the apparatus not easily obtainable at short notice. Priestley Smith advises the use of a prism, the deflecting action of which will be overcome, in the interest of single vision, by an automatic movement of the eye. If there is good vision, the eye will be seen to move back and forth, as the prism is alternately placed over it, or withdrawn. In such a case no statements are required, and we are made independent of the subject. It is stated, however, that the test is not infallible, as correcting movements are occasionally observed even in amblyopic eyes in which sight has been impaired but a short time, while its chief applicability is found only where the claim of total blindness is made.

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[1] Zehenders Klin. Monatshl., '95, p. 263.

The same principles of binocular vision suggested the use of a stereoscopic test, producing by fusion of two different images a composite picture, or inducing so-called "stereoscopic lustre" by combination of similar images, one white, the other black. It was soon noticed, however, that a simulant could, by rapidly closing and opening the eye, refer each image to its real source, and thus gain a clue to a system of consistency in prevarication, while the winking itself, however suspicious, afforded no proof of the ocular condition. To nullify the result of such a ruse, instantaneous momentary illumination was suggested by Rabl-Rückhart, while the same object was accomplished, more simply, by Volkmann, in whose Tachistoskop the test-object is concealed or revealed by the rapid motion of a sliding spring shutter, allowing no time for winking or deliberation.

Confusion of the image source is the foundation of the "blurring test," in which a strong convex glass is placed before the admittedly sound eye, and the subject made to read. The test-type is afterward withdrawn beyond the focal distance of the lens, where, if read at all, it must be by means of the other eye, alleged to be blind or amblyopic. Variations in the practical application of this procedure will suggest themselves at once, having as their object to allay the suspicions of the subject, and to avoid any manœuvre which shall give a clue to the nature of the test. Adler[1] applies it to the quantitative determination of distant vision, substituting Snellen's optotypes at five or six meters for the Jaeger print, and arranging the letters in irregular sizes with frequent variation (change—and confusion—tests). Snellen's test, one of the most ingenious of all, depends on the transmission by stained glass of rays of like color, and the absorption of all others. Transparent red and green letters can be seen through red and green glasses respectively, while the first are invisible to the eye covered by green glass, the latter to that beneath the red. This test is perfect in itself, and leaves little to be desired. As a further safeguard in cases where circumstances make it necessary to confound a more than usually shrewd malingerer, Minor[2] devised the opposite or negative of this picture by substituting opaque colored letters and reflected light with a suitably colored background. French gray was found to give the best results, as, with this modification, red letters could be seen through the green glass only, and vice versa. The gray background appeared to have the color of the glass through which it was observed, so that a letter of the same color offered no contrast, as the outlines of a red object on a red ground, for instance, would not appear. A combination of this modification with the original test was made by using a gray painted glass with some letters transparent and others painted red and green, to be viewed by transmitted or by reflected light. A slight objection to this, as to the original Snellen test, is the possibility that the subject, by winking, may inform himself as to which eye he uses to see the different letters, and, as both eyes are covered by deeply colored glasses, he may easily escape detection. For this reason it is advisable to arrange for only momentary exposure of the test-card, or to adopt a modification which suggested itself to me while making some experiments with the different methods, and which allows constant supervision of the simulating eye. Over the other eye only I place a colored glass, using as test objects opaque red and green letters on a dull black background to be viewed by reflected light. With this arrangement red letters are seen through red glass only, while green letters merge into the black field and are invisible. The subject cannot blink without attracting instant attention, and eliciting an admonition to keep both eyes open, and closure of the sound eye under the glass will teach him nothing. Substitution of a gray background gives us an adaptation of Minor's "negative" Snellen-test, and adds to the possibility of variation.

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[1] Bericht, 25 Vers. d. Ophth. Jeseelsch. Heidelberg, p. 325

[2] Archives of Ophthalm. Vol. XXII, p. 493.

In conclusion I wish to suggest a test which has the great advantages of requiring no special apparatus, of being easily demonstrable, and of offering no clue to the malingerer, while it enables us to make a quantitative determination of visual acuity. A small test card[1] and a concave mirror, the ordinary laryngoscopic head-mirror, are all that is required. A concave reflecting surface of this kind produces a magnified, virtual image of an object held within its radius of curvature, which by proper management can be made to fall on one or the other retina, or on both. Experiment has shown me that it is impossible to say with which eye the mirrored image is seen, until the fact is demonstrated by alternate exclusion of both eyes from the visual act. In fact the eye which is not called into play is the one we believe to be active. In practice the test is made while standing in front of the subject and somewhat to the side of the admittedly sound eye, the mirror being worn as for laryngoscopic examination. The subject will now see the reflection of this eye only, and the image of the test-card which is placed a few inches from his temple, on the corresponding side. If the card, while in this position, is read, it must be by calling into play the other eye, the reflection of which the malingerer does not even see, and whose action is demonstrated by having him close it. He will then be convinced, by seeing nothing, that the sound eye which he believed he was using, was in no way concerned in the visual act.

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[1] As the mirror reverses the letters, they must be written backward, or face both ways, as O, T, V, etc.

As a control test, before demonstration, the mirror and the card are held on the side of the simulating eye, and, as before, the reflecting glass is slightly tilted on its vertical axis so that the card and this eye only are seen by the subject, who naturally thinks that the mirrored eye is the one which receives the visual impression, whereas in fact it is seen by the sound eye, which is nowhere visible. If it is now stated, as will natually be the case, that the image can not be seen, deliberate falsehood, at least, is made evident. The test may be varied by very slightly altering the tilt of the mirror, so that reversed conditions are produced and the sound eye only sees the card and its own reflection when they are on its side, and vice versa. For successful practical application the card should not be too large, at best not larger than the mirror, and a little previous practice may be required to insure rapid and accurate adjustment of the latter. In this manipulation we are aided by the position of the reflected image of the test-card on the subject's cornea or sclera. To insure absolute correctness of the optical conditions, however, it may be well to have both card and mirror mounted in a light frame.

CYLINDRICAL TRANSPOSITION.

BY NORBURNE B. JENKINS, M.D.
KNOXVILLE, TENN.

The transposition of cylindrical lenses has been for years one of the most intricate problems in the science of optics. It has engaged the attention and taxed the skill of all interested in the properties of lenses. Heretofore there has been no well-defined rule of solution. The various and complex theorems proposed are as numerous as the optical mathematicians, each of whom presents some combination of abstruse principles, the explanation of which is understood only by the exponent himself.

The propositions as stated below involve only a limited knowledge of addition and subtraction, and almost reduce cylindrical transposition to an axiom.

A convex cylindrical lens of a given focal distance, say one meter, and of a given axis, say 90°, is the equivalent in refractive power of a sphero-cylindrical lens composed of a convex spherical lens of an equal focal distance, one meter, combined with a concave cylindrical lens of the same focal distance, one meter, but with the axis at a right angle, 180°, to that of the original convex cylindrical lens. (See example No. 1.)

A concave cylindrical lens of a given focal distance, say one-half meter, and for a given axis, say 180°, is the equivalent in refractive power of a sphero-cylindrical lens composed of a concave spherical lens of an equal focal distance, one-half meter, combined with a convex cylindrical lens of the same focal distance one-half meter, but with the axis at a right angle, 90°, to that of the original concave cylindrical lens. (See example No. II.)

One component cylindrical lens of any given combination should be converted into a sphero-cylindrical lens, and the computation is based upon this result.

The following examples illustrate the transposition of combined and compound lenses:

No. I.—A convex cylindrical lens: + 1.00 C. axis 90° ⊃ 0.0 is equal to + 1.00 S. ⊃ –1.00 C. axis 180°.

No. II.—A concave cylindrical lens: –2.00 C. axis 180° ⊃ 0.0 is equal to + 2.00 C. axis 90° ⊃ –2.00 S.

No. III.—A crossed cylindrical lens: + 1.37 C. axis 82° ⊃ –1.75 C. axis 172° is equal to + 1.37 S., –1.37 C. axis 172° and –1.75 C. axis 172°, which equal + 1.37 S. ⊃ –3.12 C. axis 172°.

No. IV.—A convexo-convex sphero-cylindrical lens: + 2.25 S. ⊃ + 1.62 C. axis 88° is equal to + 2.25 S., + 1.62 S. and –1.62 C. axis 178°, which equal + 3.87 S. ⊃ –1.62 C. axis 178°.

No. V.—A convexo-concave sphero-cylindrical lens: + 3.50 S. ⊃ –1.25 C. axis 165° is equal to + 3.50 S., –1.25 S. and + 1.25 C. axis 75°, which equal + 2.25 S. ⊃ + 1.25 C. axis 75°.

No. VI.—A concavo-concave sphero-cylindrical lens: –3.00 S. ⊃ –1.50 C. axis 77° is equal to –3.00 S., –1.50 S. and + 1.50 C. axis 167°, which equal –4.50 S. ⊃ + 1.50 C. axis 167°.

No. VII.—A "mixed" sphero-cylindrical lens: + 2.12 S. ⊃ –3.37 C. axis 60° is equal to + 2.12 S., –3.37 S. and + 3.37 C. axis 150°, which equal –1.25 S. ⊃ + 3.37 C. axis 150°.

No. VIII.—A sphero-cylindrical meniscoid lens: −2.00 S. ⊃ + 3.25 S compounded with + 1.50 C. axis 75° is equal to −2.00 S., + 3.25 S., + 1.50 S. and −1.50 C. axis 165°, which equal + 2.75 S. ⊃ −1.50 C. axis 165°.

No. IX.—A sphero-crossed cylindrical lens: + 5.00 S. compounded with + 2.00 C. axis 85° ⊃ −6.00 C. axis 175° is equal to + 5.00 S., + 2.00 S., −2.00 C. axis 175° and −6.00 C. axis 175°, which equal + 7.00 S. ⊃ −8.00 C. axis 175°.

No. X.—A quadro-meniscoid lens: + 3.25 S. compounded with + 2.00 C. axis 65° ⊃ −2.25 S. compounded with −1.75 C. axis 155° is equal to + 3.25 S., + 2.00 S., −2.00 C. axis 155°, −2.25 S. and −1.75 C. axis 155°, which equal + 3.00 S. ⊃ −3.75 C. axis 155°.

THE PRESENT STATUS OF REFRACTION.

BY RICHARD H. SATTERLEE, M.D.

Oculist for Buffalo Railway Company; Buffalo, Rochester & Pittsburgh R'y.; Buffalo & Niagara Falls Electric R'y.

BUFFALO, N. Y.

Anent the threatened passing of the oculist and the substitution of the "ophthalmo-optician," "Doctor of Refraction," et al., would it not be advisable to inquire into the cause of this state of affairs?

1. Many brilliant operators look upon refraction as a momentary pastime or a nuisance to be quickly gotten rid of, hence the unsatisfactory result.

2. Many conscientious men have not the time to devote to any one patient to properly determine the refractive trouble.

3. The average ophthalmologist writes a prescription for the glasses.

If our work is all that can be desired why are there two thousand refracting opticians in New York state, and schools all over the country turning out hundreds of "graduate opticians" who fit the frames perfectly and (sometimes) the lenses?

What is the remedy? In the first and second class the refractive work should be referred to some one who can take the time, take the interest, has the knowledge and sees that the case is properly fitted in every particular.

The advantage that these opticians have is that they take the time and *furnish the glasses.* If you will watch your own prescription work that you send to the optician you will find 25 per cent. is improperly filled. The lenses are wrong, the P. D. is wrong, the centering of the lens is wrong, the height of the bridge is wrong, the nose piece—if eye glasses—is not adapted to this particular nose, etc., etc. Any one of the errors mentioned may cause your work to be unsatisfactory and a detriment to your reputation. Can you afford it? Should your responsibility end with writing the prescription? I think not. I have furnished glasses for eight years and I never write a prescription without misgivings unless I can later observe by inspection the way it has been filled.

I heard one eminent ophthalmologist say that he generally prescribed a minus or plus lens, whichever seemed the more agreeable to the patient. It is this absolute indifference to the correct diagnosis that has done the most to encourage jewelers and others to take up refraction.

Some men prefer operating to refractive work, others prefer refraction. It seems strange to me that so few partnerships of this sort have ever been formed. We have all seen cataract cases that were not refracted so as to bring out the best sight.

Many physicians are sending direct to opticians rather than subject their patients to a hasty and superficial examination. Let us revise our methods. Utilizing the best methods of opposition is better than any legislation striving to control competition.

187 Delaware Avenue.

A NOTE ON TOXIC CHROMATOPSIA AND TOXIC HYSTERIA.*

BY G. E. de SCHWEINITZ, A.M., M.D.,
PHILADELPHIA.

Colored vision as a symptom of santonin poisoning is well known; more rarely it develops under the influence of nitrite of amyl, picric acid, chromic acid, digitalis and carbonic acid. According to Simi, it may be associated also with tobacco-alcohol amblyopia. In his case the xanthopia lasted from twilight to sunrise, and it and the other symptoms were cured by total abstinence from tobacco and alcohol. I have never observed this symptom in toxic amblyopia until recently, and I desire to present for your consideration an account of the case:

Mr. S. T. B., a retired merchant, born in this country, presented himself for treatment on the 30th of August, 1898.

History.—The patient is married, has healthy children and grandchildren, and gives no account of specific infection. Two years ago, following an attack of influenza or malaria (it is uncertain which), he developed gastro-intestinal catarrh, attended with a great deal of flatulency and nervous weakness. Dr. Da Costa, his physician at that time, informs me that the urine contained an excess of uric acid, but neither albumin nor sugar; also, there was no ocular disturbance, at least none was spoken of. This catarrh still gives him some pain and concern, but he appears cheerful, sleeps well, and has no business worries. There is a history of a fall on his back from a coach, but no present traces of injury. From the time he was eighteen years old he has smoked freely, never less than six or seven cigars a day, but he has never used intoxicating drinks, not even beer. For a number of years he also chewed tobacco, but he has discontinued this habit since 1874. Occasionally at night, by direction of his doctor, he has taken a tablespoonful of hot whisky to relieve stomachic pain. This dose, however, has been of rare occurrence.

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* Read before the Ophthalmic Section of the *College of Physicians of Philadelphia*, November 15, 1898.

He first observed "poor vision" in his left eye in 1864, and from his account one would suppose that the visual defect should be classified as a congenital amblyopia. Decided visual disturbance began in the left eye, he maintains, eleven years ago, when it was inflamed, and after this inflammation had passed away his sight was even more defective than formerly. The doctor who attended him at that time, but who has kept no notes of his case, writes that the inflammation was an iritis; but there are no remains of this disease to be found in the eye.

The right eye, the patient asserts, performed its functions well and usefully until eight weeks before he consulted me; or, in other words, until the first part of June, 1898, when he was attracted by a phenomenon which resembled smoke before his eyes; at first bluish, but soon changing to a yellow or orange-yellow color, which he compared to the smoke rising from the chimneys of the zinc works in the town in which he lived. This smoke is of a rich orange-yellow color.

Examination.—In the right eye V. = 6/15 + 4.50 M. = 1 at 25 cm. The pupil reactions are normal; the media are clear; the optic disc is round and slightly congested, with the exception of a small quadrant on the temporal side, which is somewhat paler than the rest of the surface; the central lymph sheaths are full, the veins and arteries about normal in size and there are no macular changes.

In the left eye V. = sees hand move. The pupil reactions are normal; the media are clear; the disc is slightly more flushed than the one upon the opposite side but contains no patch of pallor. In other respects the ophthalmoscopic appearances are similar to those of the right side.

The urinary analysis was as follows:

No. 1.

Color	amber.
Reaction	acid.
Sp. gravity	1022.
Albumin	none.
Sugar	none.
Urea	grs. 9.10 to ℥ i.
Chlorides	normal.
Phosphates	excess.

Micrococci ureae.
Bacterium termo.
Crystals of phosphates.
Epithelial cells, some of which are granular.
One epithelial cast.

No. 2.

Color	amber.
Reaction	alkaline.
Sp. gravity	1017.
Albumin	none.
Sugar	none.
Urea	grs. 8.64 to ℥i.
Chlorides	normal.
Phosphates	excess.

Micrococci ureae.
Bacterium termo.
Crystals of triple phosphates.
Epithelial cells.
No casts.

The peripheral visual field of the right eye was not far from normal and the color fields occurred in their normal sequence, perhaps slightly contracted. There was a typical central scotoma for red and green, capped by an area of imperfect color perception. Its dimensions were: outward, 20°; upward, 7°; inward, 3°; downward, 5°.

In the left eye the peripheral light field, taken with a small flame, was perfectly normal. Perception of any color was denied, although the difference between a white and a black test-object could be noted, except in the central area of the field where the white test-object disappeared absolutely within the area of a scotoma which was sharply outlined as follows: Outward, 18°; upward, 9°; inward, 3°; downward, 4°.

The diagnosis of amblyopia due to tobacco acting as a poison on a man whose system was depressed by gastro-intestinal catarrh seemed clear enough, and the patient was advised to discontinue smoking absolutely and to take for a time iodide of potassium and bichloride of mercury and later strychine.

The patient returned on the 21st of October, 1898, or nearly two months later, with the statement that he was considerably better. He confessed that occasionally he had lighted a cigar and taken "a few whiffs," but maintained that this practice occurred only once or twice a week. The vision of the right eye was now 6/10 and moderate sized print could be read easily with a + 3 D.; that of the left eye remained unchanged. The yellow vision, although still present, had become very faint. No attempt was made to map the scotomas at this examination. The treatment was continued and the patient directed to abstain entirely from tobacco.

He returned two weeks later with the statement that his vision had much improved, that the chromatopsia had practically disappeared and in its place there was only a slight shimmering in the atmosphere, as when waves of heat pass through the air. In the former scotoma-area of the right visual field there was restoration of the red-green sense, except at the culmination spot of the scotoma where red looked "yellowish" and green "of a lighter color." Vision with + 0.50 D. was 6/6, and with proper presbyopic correction added, J. 1 was read at 33 cm. There was no change in the appearance or apparently in the vision of the left eye, with which the patient maintained he saw nothing but shadows.

A careful series of tests was then made with the ordinary methods for detecting feigned monocular blindness and the patient promptly responded to each one of them. With Harlan's test it was readily demonstrated that he saw with his left eye just as well as he did with his right, reading exactly the same letters. The ease with which this demonstration was made so astonished me that I repeated it over and over again, modifying it in various ways, always with the same result.

The left side of the face, certainly the left side of the forehead, while not absolutely anesthetic, showed diminished sensation. Anesthesia of the entire half of the body, however, could not be demonstrated. There were no particular changes in the knee-jerks, the station was not anomalous, nor were there noticeable fibrillary contractions.

In this interesting case there appears to be an association between toxaemia and hysteria. It is well known that the so-called hysterical lead paralysis is common enough in lead factories, its subjects being affected with hemianesthesia, amblyopia on the same side, anosmia on the opposite side, dyschromatopsia and reversal in the color lines. Goinou, who has made a very good study of these cases, thinks that many other toxic agents can originate an hysterical condition, for example, alcohol, mercury, bisulphide of carbon and probably nitrobenzol, and that the patients will suffer from hemianesthesia, restriction of the visual field and similar conditions, and can be cured by remedies of indifferent potency, or even by suggestion. I know of no reason why tobacco should not be added to this list. I regret to say that I did not try the effect of suggestion or indifferent remedies, but gave very honest doses of iodide of potassium, bichloride of mercury and strychnia, as I did not in the least suspect either an hysterical element, or that the blindness was feigned, before the tests to detect pretended amblyopia were made.

It is interesting to observe that, if the patient's clinical history is correct, apparently he has disassociated the left eye from the visual act for at least eleven years, because one would hardly credit this patient with malingering; indeed, there is nothing to render such a course on his part necessary, either now or in times past, and although the fact that he saw with the left eye was developed by the ordinary tests for feigned blindness, they do not necessarily mean that the blindness was feigned. It is probable in these cases, as has been pointed out, that the subject really sees, but that the impulses coming from the periphery are not properly recorded until something takes place which places the burden of the visual act upon the supposed blind eye. Be this as it may, the record of the case seemed worthy as an interesting clinical observation, not only on account of the association of what may be called hysteric and toxic elements, but chiefly on account of the very rare phenomenon of colored-vision under these circumstances. It goes without saying that no question suggested to this patient to describe colored-vision. It was for this that he sought advice and his descriptions were given without the slightest prompting.

VISION OF RIGHT EYE DESTROYED BY THE KICK OF A HORSE ON RIGHT SUPRA-ORBITAL RIDGE AND RIGHT CHEEK.*

BY WILLIAM C. BANE, M.D.

Late Ophthalmologist to the Chair of Neurology and Chief Clinical Assistant in Ophthalmology
and Otology in the Medical Department of the University of Colorado; Ophthalmologist
and Otologist to the House of the Good Shepherd; Oculist and Aurist to the
C., R. I. & P. Ry; Consultant for Diseases of the Nose and Throat
to the State Home for Dependent Children.

DENVER, COLO.

Illustrated.

I submit the following report, as such cases are rather rare. It is of interest because the man escaped with his life, and the subsequent changes in the right disc confirmed the diagnosis and prognosis.

On September 14th, 1897, I was requested by Dr. J. N. Hall to see D. R. D., aged 44 years, a Scotchman; occupation that of a stone mason.

I found the man at his home, sitting in a darkened room with a bandage covering his right eye. He gave the following history: Five days previous, between five and six o'clock in the afternoon, he was out riding in a buggy with a fellow workman, and by some mismanagement he was pitched from the conveyance. He fell near the horse and was kicked in the face by the animal. For about eleven hours he was unconscious, during which time he was conveyed to the County Hospital, where his wounds were dressed. On the morning of the third day after the accident he discovered that he had bare light perception with his right eye. An examination revealed a lacerated wound an inch and a half in length, extending down to the bone through the brow, immediately over the supra-orbital ridge. (See drawing, made after the wound had healed.) The tissues covering the right malar bone were swollen and discolored· There was some irregular cuts in the right upper lip. In the tissues of the lower outer quadrant of each eye slight ecchymosis existed. The action of the external ocular muscles was normal. Vision of right eye was nil, not having light perception. Vision of left eye = 6/6. Fields of left eye normal for white. Pupils were equal. The pupillary reflex of the right eye was absent, the associated reflex of the right pupil with that of the left was normal. The mediæ were clear and the fundi of normal

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*Read before the *Denver and Arapahoe Co. Med. Soc.*, Nov. 9th, 1898.

appearance, there being no change in the discs or vessels from the normal. The day previous to my first visit he had a moderate headache. His appetite was fair, pulse was 90 and temperature $99\frac{6}{10}$ths at 6 P.M. Prognosis as to vision of right eye was unpromising, as it seemed evident that he had sustained a fracture of the right optic canal, with injury to the nerve. Patient was placed upon iodid of potass. in five grain doses four times daily.

On September 17th the eyes were re-examined, but no manifest change had taken place in either eye. On October 4th, 1897, twenty-five days after the accident, patient complained of having noticed at times during the previous five or six days, a shadow come over the vision of his left eye, yet there was no manifest change in vision, the right being nil and the left 6/6, and the discs remained normal in appearance. Some soreness existed at the junction of the right nasal with the frontal and superior maxillary bones. Hearing, right ear equaled watch on firm contact. Left ear, not on contact. Patient stated that he had not been able to hear his watch with his left ear during the past ten or twelve years. He heard the ordinary tone of voice with either ear. The patient passed from under care in October, 1897.

On the 13th of October, 1898, I inquired for the patient, that I might know what changes had taken place in his eyes, and learned that he had recently placed himself under the care of Dr. Coover, in the Dispensary of the Gross Medical College. To Dr. Coover I am indebted for the following statement of the case: "Right eye, no light perception, pupillary reflex is absent, blue white atrophy of right disc, absence of its capillary vessels and slight narrowing of the retinal arteries. Left eye vision = 6/6, disc appears normal." This evening—November 9th, 1898—it was my privilege to examine the man's eyes and I found them as reported.

Dr. Von Hölder,* a pathologist, during a period of forty years, examined 124 cases of fracture of the skull. In 86 there was fracture of the base of the skull, and in 79 of them the fracture extended into the orbital roof. In 63 of the 86 he found a fracture through the optic canal, always through the upper wall and sometimes through the inner; occasionally on both sides. In 42 of the cases there was hemorrhage into the sheath of the nerve. Gower† states that "*fracture of the skull* not uncommonly causes loss of sight in consequence of laceration of the optic nerve. The most frequent causes are blows and falls on the frontal bone, (especially the orbital portion), less frequently on the temporal or occipital bone. The effect of the resulting laceration of the nerve is usually immediate and permanent loss of sight. It is generally unilateral and on the side of the injury, rarely on the opposite. The lesion is commonly behind the entrance of the central vessels, hence at first there is no ophthalmic changes or only transient retinal hyperemia, but atrophy gradually sets in. The ultimate appearance of the disc is usually simple atrophy, the edges being sharp and the vessels of normal size."

At the time of the accident there evidently occurred fracture of the orbit or bony canal through which the right optic nerve passes and with it loss of function of the nerve, either from laceration of the nerve, hemorrhage into its sheath or both.

Steele Block, 16th and Stout Streets.

HERNIA OF THE SCLEROTIC.

BY S. B. MUNCASTER, M.D.
WASHINGTON, D. C.

Illustrated.

A patient came from Alexandria, Va., to the Woman's Dispensary with the following history: She could only see to move around in her home; the left eye was operated upon in Baltimore about two years ago, and she was not able to see much some time before the operation.

Upon examination I found a hernia of the sclerotic of the left eye. The sclerotic of the upper and outer quadrant was bulged 4 mm. from the normal rotundity of the eyeball, and was 4 mm. in diameter at the base.

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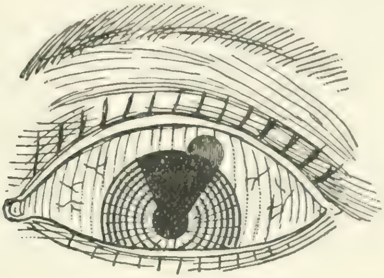
* Noyes on *Diseases of the Eye*, 2d. Ed., page 685.

† *Medical Ophthalmoscopy*, 3d Ed., page 185.

The raised portion of the membrane was so thin that I was afraid to put much pressure on it to force the membrane down. The membrane was almost transparent; so much so that the outlines of some of the retinal vessels could readily be discerned.

An iridectomy had been performed, and a large section of the iris removed. The sclerotic was separated from the ciliary region at this point forming a canal from the anterior chamber to the hernia where the aqueous fluid passed. A thin membrane separated the aqueous from the vitreous humor.

On close observation a dislocated opaque oscillating lens was seen to the right of the anterior chamber. An incision had been made in the cornea; no doubt for a cataract extraction.



This hernia is of interest on account of there not being any inflammatory condition of the sclerotic; the complete opening that can be seen leading from the anterior chamber to the hernia; how thin a sclerotic membrane may be stretched without a rupture, and the amount of aqueous fluid it contains.

She can count fingers at three feet with the left eye. The right eye has a complete cataract, and on examination of this eye in a dark room by aid of a candle light, I found she could not even perceive light.

I advised a slight pressure bandage for left eye, and boracic acid solution for the lids.

MUSCULAR ANOMALIES.

BY G. C. SAVAGE, M.D.
NASHVILLE, TENN.

To know ocular muscle anomalies and what to do for them, one must first know the normalities of these muscles. The best way to study the extrinsic ocular muscles is from the point of view of their final action, or rather the final result of their action, errors having been corrected by antagonizing muscles. In their final action the recti are concerned alone with the visual axes, the superior and inferior recti always keeping these lines in the plane which passes through the center of rotation and the macula of each eye, except when there is decentration of one macula, or of both in opposite directions, vertically; while the lateral recti make these axes intersect at the point of binocular fixation. The oblique muscles, in the final result of their action, are concerned alone with the vertical corneo-retinal meridians, keeping the planes of the meridians, in which are found the vertical axes of the eyes, so related that these axes shall always be parallel, except in oblique astigmatism. The torsional effect of the recti, when in action, and oblique astigmatism, alone make it necessary that there shall be oblique muscles.

The head must be in the primary position and the eyes looking straight ahead into infinity, for the normal *rest-tension* of the eye muscles to manifest itself; and then only when the different pairs are perfectly balanced in their power *to rest* as well as *to act.* In any other position of head or eyes two of the three pairs will always be guilty of errors in action, and the third pair (the lateral recti) cannot act faultlessly if attached, in greater part, either above or below the horizontal plane of the eyes; but these errors are not classed as heterophoric, for, with only normal effort, the error in action of one pair of muscles is corrected by one or both of the other two pairs. So easily and quickly are such errors corrected, no test will ever be invented that can detect them. Such a condition is orthophoria—correct final result in action of all the extrinsic ocular muscles. In such eyes we know one muscle capable of sinning against another muscle only because of our knowledge of the origin, course and attachment of these muscles, and of the center of rotation. Any variation from the condition just described is heterophoria — muscle imbalance — errors that are as common as focal errors, fully as annoying to the patient and more difficult of detection and correction by the Doctor. The varieties of heterophoria are: Esophoria, exophoria, hyperphoria, cataphoria and cyclophoria, together with their varying combinations, for two or more of these errors may co-exist in any case. In degree, heterophoria may be anywhere between orthophoria and heterotropia, from a small part of one degree to many degrees. As in ametropia so in heterophoria, the patient with the greatest error does not always suffer the most. Even very small errors often give the greatest amount of trouble. In dealing with heterophoric conditions the question is not so much, what is the kind and quantity of the error or errors? But what is the patient's ability to correct the same? Can the strain be borne without exciting nervous phenomena? Or are there reflex nervous symptoms brought on by the near use of the eyes?

There are many devices for determining the condition of the ocular muscles. Hardy & Co., of Chicago, are now perfecting a phorometer which, being constructed on what appears to be the correct principle, should be entirely trustworthy. With this instrument only one eye is under test at a time. Both the displacing prism and the rotary prisms are before the eye under test. The head must be in the primary position; the eye not under test must be directed straight ahead and the test object seen by it must be the one "fixed." The image of the test object must be displaced, in the eye under test, entirely beyond the field of binocular fixation. This eye, not being able to fuse its image with that of the other eye, being wholly from under the control of the guiding sensation, places itself at once in position, normal or abnormal, of equal tension of all the extrinsic ocular muscles. The relationship that the false image bears to the true, shows at once the kind of error, if any, while the rotary prisms determine the quantity. All of the muscles of this eye having been tested for heterophoria, the instrument is brought before the other eye and the tests of its muscles are made. In all these tests the real object is the one looked at, while the head is continually in the primary position.

The work of testing the ocular muscles is not complete when the imbalance has been determined, but the "lifting power" of the muscles must be ascertained before one can know what should be done in any given case. The instrument referred to above is capable of making the strength tests of all the extrinsic muscles except that of the obliques. The response of perfect muscles should be: adduction, 30° to 40° (always variable); abduction, 8°; subduction,* 3°; superduction,* 3°.

Orthophoria.—There are two kinds: sthenic and asthenic. In the former, the phorometer shows, both in the far and the near, perfect balance of each pair, and also shows the lifting power of each muscle to equal or exceed the standard. These muscles need be given no further attention. The other form, asthenic orthophoria, responds like the former to the balance test, the false object always bearing the proper relationship to the true; but the strength test shows that both muscles of one or more pairs, for each eye, are wanting in power. The lateral recti alone may be at fault, abduction being 4°, a little more or a little less, and adduction necessarily correspondingly low. Such a condition is not desirable and should be remedied by a daily resort to the wall-to-wall exercise, which, in time, will bring the muscles up to the normal lifting power.

* These terms were suggested by Maddox and should be adopted in the place of deorsum- and sursum-duction.

The error may be alone in the vertical pair, subduction and superduction being 1½°, a little more or less. This can be remedied by daily ceiling-to-floor exercise. When the weakness is in both the lateral and vertical pairs of muscles, the remedy is in the combined wall-to-wall and ceiling-to-floor exercise. In both of these exercises the sweep should be made rhythmically, the movements alternating about every three seconds.

Esophoria.—There are two kinds, pseudo and intrinsic (false and true). Pseudo-esophoria is caused by the effort of the ciliary muscle to correct a hypermetropia or a hypermetropic astigmatism. It may be artificially produced by concave lenses in cases in which there is no myopia, and this knowledge may be utilized in cases of exophoria associated with either emmetropia or slight hypermetropia. The concave lenses develop a pseudo-esophoria which counteracts the exophoria. Pseudo-esophoria is curable by the lenses needed for the correction of the focal error. Often a pseudo-esophoria is grafted on to an intrinsic esophoria, which cannot be changed by the wearing of correcting lenses. In esophoria of hypermetropes, some of it is always pseudo. Pseudo-esophoria lessens with advancing years and finally disappears. It gives most trouble during school life.

Intrinsic Esophoria.—This error is always due to muscle imbalance and has no connection with any form of focal error. It is of two kinds, sthenic and asthenic. In the sthenic form, one or more of the muscles that are concerned in converging the eyes are possessed of more than the normal power, while the diverging muscles are normal in their lifting power. The excess of strength of the interni is due to one of three conditions: they are too large, and therefore, too powerful; or they are too abundantly supplied with nerve-fibers; or they are attached too near the corneo-scleral junction. In either of these conditions the interni would have the advantage over the normal externi. In either condition the line of treatment, as clearly indicated as anything can be, is partial tenotomy of both interni, the object in view being to give these muscles a less advantageous attachment. One operation on each internus should be sufficient; but should some esophoria remain, a second operation on one or both interni, or a shortening of one or both externi, should be done. The safest rule is "*only one operation on any one muscle.*" Another safe rule may as well be given here: "*Never make a complete tenotomy for the cure of any kind of heterophoria.*"

In sthenic esophoria a part of the trouble is often due to a hyperphoria of one eye and a cataphoria of the other. Whenever a hyper-esophoria is found the first operation should be done on the offending vertically acting muscle: first, a partial tenotomy, including all the inner fibers, and as many as may be indicated of the central, of the superior rectus of the hyperphoric eye, thus curing some, if not all, of the hyperphoria and correcting a part of the esophoria. The second operation should be done on the internus of the same eye, dividing only the central fibers, going equally far up and down with the scissors, unless there has remained, after the first operation, some hyperphoria, in which case more fibers should be cut above than below, so as to still further correct the hyperphoria. Some esophoria remaining, the third operation should be done on the internus of the other eye, cutting only the central fibers if there is now nothing but esophoria, but cutting more fibers below than above if there is still some cataphoria of this eye. Later, if there is still cata-esophoria of this eye, the inner and some of the central fibers of the inferior rectus should be cut. Not often is it necessary to do these four operations. If more is needed a shortening of one or both externi should be done. Rhythmic exercise of the externi with weak prisms can cure low grades of esophoria.

Asthenic Esophoria.—In this condition the fault is in the diverging muscles. The adduction is not too high, sometimes even too low, and the abduction is always very low, not more than 2° to 4°. This weakness of the externi is due to a too small muscle, to a too poorly innervated muscle, or to their attachments being too far away from the corneoscleral junction. The interni not being blamable, they should not be operated upon. The externi should be shortened, the extent of the shortening depending on the quantity of the error. If the attachment is much too far back an advancement should take the place of the shortening.

If there is a complicating hyperphoria, it is best to cut the central fibers of the offending superior rectus, leaving the inner fibers to help the interni do the converging after the externi have been strengthened by shortening or advancement. Here, too, rhythmic exercise of the externi may do good.

Exophoria.—This condition is both pseudo and intrinsic, and it exists much more commonly than does esophoria.

Pseudo-exophoria depends on myopia, exists only in the near, and is curable by concave lenses. It can be developed artificially by convex lenses that over-correct a hypermetropia, hence the half-soundness in giving an over-correction of hypermetropia in such cases of intrinsic esophoria as will not submit to the more rational treatment by tenotomy.

Intrinsic Exophoria.—Of this there are two kinds, sthenic and asthenic.

In sthenic exophoria the muscles that abduct the eyes are at fault, their lifting power being above the normal, while the adducting muscles possess sufficient power to enable them to work in harmony with normal externi. The externi are too strong because they are too large, or too abundantly supplied with nerve influence, or because they are attached too near the corneo-scleral junction. In either case the indication is partial tenotomy of the externi. If a hyperphoria complicate an exophoria, the operation on the offending superior rectus should include all its outer fibers and as many central fibers as may be necessary for restoring the balance between the superior and inferior recti of this eye; and this operation should precede the partial tenotomies of the externi. Any hyperphoria remaining may be remedied by a proper cutting of the tendons of the externi, leaving more fibers below uncut on the hypherphoric eye, and just the reverse on the cataphoric eye. If there should still remain some hyper-exophoria, the outer fibers of the inferior rectus of the cataphoric eye should be divided. Some exophoria remaining, if the abduction is above 8°, a second operation can be done on the externi, one or both; but if the abduction has been reduced to 8° or less, the further operations indicated are shortenings of the interni, or, if their insertions are too far back, an advancement of one or both interni. Not often are so many operations for exophoria, or exo-hyperphoria, necessary. An operator should prefer to do many operations, however, rather than get an over-effect from a few too bold cuts.

In low degrees of exophoria, rhythmic exercise of the interni by means of prisms of from 1° to 8°, will accomplish much if persisted in. The use of strong prisms after any method, is not indicated even in exophoria; and they cannot be used in any other kind of heterophoria. The candle exercise is also good.

In asthenic exophoria the error is not chargable to the abducting muscles, but to those that adduct the eyes, these being too weak either because they are too small, too poorly innervated, or attached too far away from the corneo-scleral junction. In such cases the abduction is 8° or, more frequently, less. The indication is to shorten or advance the interni and never to cut the externi, for the very plain reason that the externi do not possess more than normal strength. Advancement of an internus, in such a case, should be done only when the point of insertion is found too far back, otherwise a shortening, safer and easier, should be done. Exercise of the interni may be tried in suitable cases, especially if operations are declined.

The oblique muscles being abductors, doubtless enter as a factor in the causation of many cases of exophoria, but in the treatment of exophoria they must be entirely ignored.

Hyperphoria and Cataphoria.—These conditions are never pseudo, that is to say, errors of refraction do not cause them; therefore the correction of refraction errors does not cure them. They are always intrinsic and may be either sthenic or asthenic in character. Hyperphoria of one eye is usually associated with cataphoria of the other, but there is such a thing as double hyperphoria, also a double cataphoria. These terms are much to be preferred to anaphoria (both eyes tending upward) and kataphoria *(both eyes tending downward).

With the new phorometer, in testing for vertical tendencies, many errors may be avoided. In sthenic hyperphoria, whatever may be its quantity, the too strong muscles (upper of one eye and lower of the other) are capable of overcoming a prism of more than 3°; and when this is true a partial tenotomy of one or both is indicated, though this operation should be done with exceeding care because of the risk of over-correction. The central fibers alone should be divided unless the hyperphoria is combined with either an esophoria or an exophoria. When possible the full effect should be accomplished by the operation on the offending muscle of the hyperphoric eye, for the reason that one looks down more than he looks up, and not that it is more difficult to operate on the inferior rectus of the cataphoric eye.

In asthenic hyperphoria, the too strong muscles being able to overcome a 3° prism only, or less, a tenotomy is not indicated. The case should be treated by exercising the weak muscles with prisms after the rhythmic method; or prisms correcting one-fourth, certainly not more than one-half, the error, should be given for constant wearing. Failing to procure relief the indication is to shorten the inferior rectus of the hyperphoric eye.

An unconscious tilting of the head toward the shoulder on the side corresponding to the cataphoric eye, is Nature's way of helping the patient. The habit of tilting is acquired in early life and continues until the hyperphoria is cured.

A double hyperphoria is always attended by trouble in near work unless the object looked at be elevated more than is usual, and even then the patient is inclined to tilt the head forward, as he does also when looking at distant objects. Such patients have a downcast look and yet may never have done a mean act. This appearance is the result of Nature's effort to favor the weak muscles. If the duction power of the superior recti is above the normal a partial tenotomy should be performed on each. If below the normal, or even normal, in duction power, the treatment should be by means of straight-forward-to-floor exercise, done rhythmically, with the view of strengthening the weak inferior recti; but failing in this, both inferior recti should be shortened or advanced. A patient cured of the double hyperphoria is also cured of the downcast appearance.

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*These terms were introduced by Dr. Stevens.

Double cataphoria is not very inconvenient in either near work or distant seeing, unless the superior obliques are weak, but gives to one a pompous appearance, the head being tilted back in Nature's effort to favor the weak muscles. The only treatment to be advised is straight-forward-to-ceiling rhythmic exercise with the view of strengthening the weak muscles.

Cyclophoria, insufficiency of the obliques or latent torsion, is of two kinds, pseudo and intrinsic. Pseudo-cyclophoria is caused by oblique astigmatism in which the meridians of greatest curvature diverge or converge above, whether the astigmatism be hypermetropic, myopic or mixed. When these meridians diverge above, the superior obliques, are forced to torsion the eyes so as to harmonize, as well as possible, the distorted images in the two eyes. The strain on the superior obliques, in any given quantity of oblique astigmatism, increases as the meridians diverge more and more up to 45° from the vertical; but in any and all such cases the strain is at once relieved by the properly adjusted cylinders, which the patient usually receives kindly, the annoying distortion being slight and disappearing soon.

Pseudo-cyclophoria caused by oblique astigmatism, with the meridians of greatest curvature converging above, is as a rule not, in itself, a source of trouble, the inferior obliques being sufficiently strong to effect the blending of the distorted images. The greater the convergence of these meridians, in a given case of astigmatism, the greater is the strain up to 45° on the inferior oblique muscles, which in some cases cannot be comfortably borne. The cylinders correcting the astigmatism relieves the pseudo-cyclophoria, but not at once, nor does its relief always bring comfort to the patient. The relief of the pseudo-cyclophoria, affecting the inferior obliques, often develops an intrinsic cyclophoria affecting the superior obliques; and the patient being less able to bear the latter than the former, the wearing of the glasses is attended by pronounced discomfort that may or may not vanish after a while. For days, and sometimes for weeks, through the correcting cylinders, objects appear distorted (the images are distorted) and for the reason that the inferior obliques, usually strong, keep up for a time the old, but now unnecessary, habit of strain. Only when this habit of torsion ceases can the axes of the cylinders and the proper meridians be in the same plane. When this does occur there can be no distortion of images and there is, therefore, no longer any apparent distortion of the object. In many cases of this character it is better to correct only a part of the astigmatism at first, adding to the correction from time to time until the full strength cylinder is reached; or giving the full correction at first, place the axis a little in the arc of distortion for the inferior obliques and, later, gradually rotating it to the proper position.

Intrinsic cyclophoria is a muscle trouble *per se*, independent of any focal error. Whenever it can be detected by any one of the several inventions* brought out for the purpose, while the two eyes are looking straight ahead, into practical infinity, it is because the superior and inferior obliques are not capable of balancing each other except when compelled to do so under the imperious law of binocular single vision, which law is suspended by all the tests. If the cyclophoria shows itself only in the near test, the eyes still looking straight ahead, but converged to a point twelve inches away, it is due to a torsioning of the eyes, in or out, by the interni, which evidences that these are attached, in greater part, either above or below the horizontal plane. If the test shows that the eyes are torsioned out, the greater part of the attachment of the interni is below the horizontal plane, and the torsional effect cannot be counteracted by the superior obliques; or if the test shows torsion in, the interni are attached too high, and the inferior obliques are too weak to counteract the torsion. The former is far more common than the latter.

If, in the two tests described above, there is no cyclophoria but the condition manifests itself when looking at the test object a few degrees below the horizontal plane, the causative agent is the contraction of the inferior recti. In depressing the eyes, the outward torsion resulting always from the peculiar attachment of these muscles, may not be counteracted by the superior obliques. But tests will show that looking below the horizontal plane does not often show the existence of cyclophoria, even when it is shown to exist by the other two tests already mentioned. Nor is the explanation far away: the eyes are depressed not only by the inferior recti (which torsion the eyes out) but also by the superior obliques (which torsion the eyes in). The greater the depression of the anterior poles (the elevation of the posterior poles) of the eyes the greater is the torsional power of the superior obliques, the advantage having been obtained by the position, so that they readily counteract the torsion effected by the inferior recti. This is a wise provision of nature, for we look down far more often than we look up. But if the superior obliques are weak they cannot counteract the torsional effect of the inferior recti with that ease which is possible when they are strong.

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*Price, Perry, Baxter, Brewer, Stevens and Maddox have all invented instruments for detecting cyclophoria, or latent torsion. Some of these can also measure the torsional power of the obliques.

In none of the three tests set forth may cyclophoria manifest itself; but in the fourth, looking above the horizontal plane, it will always be shown, except when there is marked insufficiency of the inferior obliques, and the torsion will be outward. The reason is at hand: the superior recti elevate the eyes (they torsion them in, also) aided by the inferior obliques (these torsion the eyes out, also). With the posterior pole of the eyes depressed, the powerful inferior obliques are given, by the position, torsional advantage which is more than enough to counteract the inward torsion by the superior recti; nor can this excess of outward torsion by the inferior obliques be counteracted by the aid of the superior obliques, now at a disadvantage as to torsional manifestation.

Insufficiency of the inferior obliques is exceedingly rare, while insufficiency of the superior obliques is very common, as shown in the first and second tests. Rarely is it shown by the third test, but is always made manifest in the fourth test.

The treatment of intrinsic cyclophoria practically narrows itself down to the treatment of insufficient superior obliques. When it is not found in test *one* but is found in test *two*, a few of the lower fibers of both interni can be divided,* especially if there is esophoria. But the best treatment is rhythmic exercise by means of concave cylinders, their axes in the proper arc of distortion, the upper temporal arc for the superior obliques, the upper nasal for the inferior obliques. Some cases who are not astigmatic are helped by the wearing of weak cylinders, a .50, with axes in arcs of rest for the weak pair—if the superior obliques are weak, and minus .50 cylinders are given, their axes should converge above, more or less, up to 45° for each. Cylinders thus used can do as much for weak oblique muscles as prisms in position of rest can do for weak recti muscles. Exercise of the obliques by cylinders is both as scientific and successful as exercise of the recti by means of prisms.

In our study of muscle anomalies we are too prone to forget that there are intrinsic as well as extrinsic ocular muscles. The sphincter of the iris may be normal in size and efficient in power, so that the quantity of light entering the eye may be regulated with ease and comfort. Again the sphincter may be so small and feeble that it would be impossible, without discomfort, for the pupils to be kept small for a long while, when exposed to bright light. Such eyes, and such only, when free from disease, call for tinted glasses. Other errors may be sought, found and corrected, but if this error is overlooked the patient cannot be entirely relieved. Such patients, when neither converging nor accommodating, suffer if exposed to light reflected from bright surfaces, such as white houses, bright sand, snow, etc. Such sphincters might be strengthened by alternate (rhythmic) exposure to bright light and darkness a few minutes each day.

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*The author first suggested operation on the recti to strengthen the obliques, in Washington, several years ago. Last year Dr. Stevens made the same suggestion.

That there may be abnormal weakness of the ciliary muscle in young people is a matter of too easy demonstration to be doubted. Its lifting power should be 3.00 D (it should overcome a minus 3.00 sphere without the aid of convergence). If it can do more than this, it is well; but if less, it will be a source of trouble which should never be overlooked, because it can be remedied. The remedies are two: first, presbyopic lenses before the presbyopic age; second, rhythmic exercise by means of minus .50 spherical lenses. The exercise should be resorted to once in the twenty-four hours, and continued for ten minutes. The patient should be seated eight to twelve feet from the object to be looked at—a figure on the wall, or, if at night, the blaze of a candle—and the frames containing the minus spheres should be raised and lowered at regular intervals of three to five seconds throughout the sitting. The lenses for correction of focal errors should be worn during the exercise.

THE PUPIL REFLEX IN INFECTIOUS DISEASES.—Dr. Corte draws the following conclusions: (1) In measles, scarlet fever, and ordinary small-pox the pupil reflex is normal; in the primary form of hemorrhagic small-pox it is weaker or absent. (2) In typhoid fever, complicated with lung affection, the pupil reacts slowly, whereas in infectious endocarditis the pupil reflex is absent. (3) In puerperal fever, complicated with endocarditis or peritonitis, the pupil reflex is wanting—*Klin.-therap. Wochenschrift, May, 1898.*

THE
OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JANUARY, 1899. No. 1. NEW SERIES

EDITORIALS.

The official circular has been sent out announcing the meeting of the *Ninth International Ophthalmological Congress*, which will be held at Utrecht, Holland, August 14 to 18, 1899.

THE OCULAR QUALIFICATIONS OF THE OCULIST.

("*And why beholdest thou the mote that is in thy brother's eye, but perceivest not the beam that is in thine own eye?*"—Luke, vi. 41.)

While it is not to be gainsaid that mind is the master, and that a clever workman may sometimes do good work with imperfect tools, it should be remembered that good instruments are essential to full production and perfect work. If in any art there be needed supernormal visual acuity, accurate perception and generally strong eyes, it is in medicine. Yet there are a large number of men with defective vision who are doing more or less work in our profession—and some of these have not only climbed the ladder of fame, but are leaders in medical science at the present day. Their success is due to their brains; but they themselves will acknowledge that they have been more or less handicapped in their life work by their ocular defects. All the more honor is due them; but what of the coming men, those who are entering our more and more crowded profession?

If a physician should possess all the senses, even more should the specialist have them to an exceptional degree. He is supposed to see what to others is hidden, and thus should have the natural qualifications essential to support his claims as a specialist. There are many young physicians now studying ophthalmology who would attain more complete success, or who at least would not fail, if they would further qualify themselves for the honored position of general practitioners of medicine rather than go handicapped into a specialty which demands such good vision.

The following, to which I think we may all subscribe, is abstracted from a portion of the text accompanying Professor Haab's new "Atlas of Eye Diseases." ("Aussére Augenerkrankungen." Bd. XVIII Lehmann's Medium Hand-Atlanten. München, 1899):

"It is often observed that physicians who are studying ophthalmology, preparatory to special practice, pay little attention to their own eyes. An especial amount of visual acuity is very necessary in this specialty, although for ordinary examination of the anterior portion of the eye a moderate degree of visual acuity may be aided by enlargement by the magnifier; for ophthalmoscopic examination the person who does not see well is always behind the sharp sighted. Especially persons who have considerable astigmatism are not fitted to recognize external eye diseases as well as those of the fundus, although some may do so, but these with much greater labor.

"A slight amount of myopia (1 to 3 D) is better than hyperopia, because the age of the person soon makes the early use of convex glasses necessary, which for close examination and in operations, although they do not greatly interfere, are disagreeable and render examination more difficult. The perfect accomplishment of binocular vision is very necessary for proper stereoscopic sight, and especially for the accurate determination of depth, in examination of many ocular disease processes. Thus those who only see with one eye are deprived of a very great aid, that is, the correct determination of distance and dimensions. This is, of course, helped a great deal by the use of the loupe, but this instrument is not available in many operations.

"Of course, it is possible for some who have only one good eye, or whose eyes do not work in a normal manner, to overcome these defects in a great measure, but this depends upon the person, and, at any rate, facility of handling comes to them later than if they had sharp sight. Even if they finally acquire a knowledge of diseases and facility of operation with great amount of labor, and have brought lenses and all other forms of help to the aid of their diminished sight, for researches or procedures of an operative or exploratory nature they are handicapped by those who see better.

"I certainly know oculists who have only one good eye, or who have astigmatism, who are able to do proper work, but that does not count for the case of students who wish to take up special eye practice. I advise them to only do this if a proper examination of the eyes has shown that the visual acuity is at least one and a half times that of the average person, that good binocular vision is present, and that color blindness is absolutely excluded. Those who undertake ophthalmology, without these requisites, are certainly destined to be in more or less danger of being excelled by those who have been given better eyes by nature."

H. V. W.

AT THE MEETING of *New York State Medical Society*, Dr. Oppenheimer of New York City, read an interesting paper on "Eye Lesions in some Diseases of the Kidneys." He said that the most frequently observed lesion of the eye in connection with the disease of the kidney, was retinitis albuminurica. He states that these cases were almost always associated with hemorrhage, which darkened the prognosis, as it might be assumed that the same condition was present in the brain. Dr. Oppenheimer believes the retinal condition to be dependent upon the condition of the blood associated with cardiac hypertrophy and high arterial tension.

Uremic amblyopia occurring in the course of nephritis incident to exanthemata or during pregnancy should be distinguished from true retinitis albuminurica. The former is accompanied by headache, nausea, vomiting, scanty and albuminous urine, and more or less loss of vision. Uremic convulsions may occur. The prognosis is usually good in these cases, and the reaction of the pupil to light proves the blindness to be of central origin. The ophthalmoscope reveals no appreciable lesions. Albuminurica retinitis, on the contrary, comes on gradually in the course of chronic nephritis and is accompanied by distinct retinal lesions.

AN ENGLISH OBSERVER gives the results of some of his investigations on the appearance of the eyes in animals under various emotional conditions. He noticed that the pupil of a fox terrier, when teased beyond endurance, became greatly dilated. He also observed the same phenomena in cats and monkeys when enraged or meditating mischief, and that when they meditated an attack upon some other animal their pupils became suddenly contracted.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

November 10, 1898.

An ordinary meeting of the society was held on November 10th. Mr. F. Richardson Cross, vice-president, being in the chair.

Mr. Priestley Smith read a paper entitled *The Accommodation Theories of Helmholtz and Tscherning: Suggested Explanation of their Discrepancy.* He said that Tscherning's theory was sharply opposed to the generally accepted explanation, but was based on very accurate observations. The question was whether the accommodation change in the lens depended on slackening of the zonula (Helmholtz) or on tightening (Tscherning). The anatomical arrangement of the parts concerned and nearly all clinical and experimental facts, especially the observations of Hess, which showed that during strong accommodation the lens was often tremulous and displaced downward by gravity, strongly favored the former view. Tscherning, however, had proved that during accommodation the anterior lens surface changed from a globular to a hyperboloid curve — that is, tended to become conical — sharper at the center of the pupil and flatter toward the margin, and this, he contended, could only be caused by tightening of the zonula, supplemented by internal resistance at the pole of the lens. Mr. Priestley Smith's object was to show that this change could be equally well explained by slackening of the zonula. Let the case of an elastic circular hoop of steel first be taken. Traction at the sides transformed it into an ellipse; the curve flattens at the poles and sharpens at the equator, and somewhere intermediate between these regions was a point where no change took place. The position of this point and the general contour assumed by the hoop were governed by the varying resistance which it offered at different points. By modifying the resistance the curve could be modified at pleasure. Let the resistance at the pole be increased and the conical form observed by Tscherning was obtained; let it be increased toward the equator and the opposite effect — namely, a flattening at the pole and a sharpening of the curve elsewhere — was obtained. Mr. Priestley Smith exhibited a model consisting of an elastic hoop of metal bent so that it assumed in exaggerated form the shape of the lens during accommodation—namely, conicity of the anterior surface. It was strengthened with supplementary elastic strips in such a way that its resistance or rigidity increased progressively from the pole toward the equator. Traction at the equator, representing tightening of the zonula, reduced the conical to a spherical form. In the latter condition it represented the lens when subjected to the influence of the zonula; in the conical state it represented the accommodative change which occurred when the zonula was slackened by contraction of the ciliary muscle. It would be easy to theorize as to the resistance proper to the crystalline lens and to show reason for supposing that the arrangement of the fibres was such as to render the resistance progressively greater toward the equator, but Mr. Priestley Smith said he would not go beyond demonstrable facts. What he desired to show was that the changes which Tscherning had demonstrated with such admirable skill and ingenuity were not incompatible with the theory of Helmholtz. To his mind they were explained more satisfactorily by this theory than by any other.

Mr. Lang asked the author his views as to the effect of the constant growth of the lens on accommodation of it when near objects are viewed.

Mr. Ernest Clarke asked if normal lenses removed from the eye would assume the shape they are said to do in the eye when the suspensory ligament is relaxed.

Mr. Bass asked whether the capsule offered a uniform resistance to the entire anterior surface of the lens, as if the center were thinner either compressing the periphery of the lens or slackening of the capsule would have precisely the same effect.

Mr. Hartridge said that in cases of congenital dislocation of the lens it was always more globular than when under normal conditions; this therefore was in favor of Helmholtz's theory.

Remarks were also made by Mr. Doyne and the chairman.

Mr. Priestley Smith said in reply that the continuous growth of the lens was obvious in the enlargement and sclerosis of the organ with advancing age, both changes representing the steady development of epithelium in an enclosed space where there was no means of escape; this of course was inevitable.

The lens when free actually took the shape he had illustrated on the model, although this was much exaggerated by it.

The anterior capsule was thicker than the posterior and the juvenile lens was so soft that the slightest pressure only was needed in order to change its shape. He commented strongly on the manner in which Helmholtz's measurement of the antero-posterior diameter of the lens, viz: 3.7mm. had been copied into almost every text-book, whereas the true measurement is 4.5 to 5mm.

Abstract of "A Case of Myxo-Fibroma of the Optic Nerve Sheath."

Mr. Arnold Lawson read this paper:

Ethel D——, aged 2 years, was brought to the Paddington Green Children's Hospital on January 13, 1898; the mother stating that she thought the left eye was blind and larger than the right. The illness dated from the previous October, when the failure in sight was first noted. The "growing out of the eye" had been noticed for a few weeks. The child's family and previous history were both excellent. She was a fat, healthy looking child in apparent excellent health. There was very slight proptosis of the left globe directly forward without any limitation of movements. Nothing abnormal could be felt behind the globe, there was glandular enlargement; and ophthalmoscopically the media was normal and the only striking thing was the large size of the veins. There was no chemosis of lids or conjunctiva, and the left pupil was decidedly sluggish in action.

Five weeks later the proptosis was decided, but movements normal. Left pupil quite insensitive to light and semi-dilated. The optic nerve was paler than right and the veins very large, but exhibited no pulsation, nothing could be felt behind the globe. A probable diagnosis of optic nerve tumor was made.

A few weeks later all the symptoms had much increased and the nerve was of a chalky white color. The child now began for the first time to be peevish and fretful and occasionally put its hand to the left eye. Immediate operation was advised but had to be postponed for nearly two months on account of a severe attack of pertussis, so that the operation was not performed until four months after the child's first visit. Before the operation the proptosis was very considerable and the nerve of a brilliant whiteness. The retinal arteries was very pale and reduced to threads. Still nothing could be felt behind the globe. The child's health was very good, though it was fretful.

The operation consisted in extirpation of the eye and orbital contents. The orbit was almost completely filled by an exceedingly hard tumor of the density of cartilage, which extended back to the very apex of the orbit. The orbital fat was nearly absorbed and the muscles reduced to fine atrophied bands. The tumor lay quite free within the orbit and the periosteum and bone were not infiltrated. Great difficulty was experienced in removing the tumor without excising it in small pieces on account of its extreme hardness and large size. The optic foramen was of normal size, but as a precaution it was scraped out as far as possible with a very small sharp spoon. The orbit was plugged with tampons of bi-cyanide gauze, and the child made an excellent recovery and is perfectly well at this present time, six months after the operation.

Microscopical sections of the tumor showed it to be of quite simple structure, consisting of interlacing dense bands of fibrous tissue, with here and there patches exhibiting well-marked myxomatous changes. It entirely surrounded the nerve throughout the whole of its intra-orbital course. A section of the growth showed the nerve lying quite free within its sheath, the interior of which was smooth and normal whilst the outer layer was incorporated with the growth. It was quite impossible to tell whether the dural or pial sheaths were the source of origin, but the fact that the outer surface of the tumor was smooth and covered by an ill-defined capsule might point to the latter, being the expanded and attenuated dural sheath, and that the tumor sprang from the outer surface of the pial sheath. The whole tumor was of about the size of a partridge's egg.

Attempts to save the eyeball in cases of solid orbital growths were, in Mr. Lawson's opinion, to be strongly condemned. He maintained that it was impossible to remove the orbital tissues surrounding the growth in a satisfactory manner if the globe was retained. The vast majority of solid orbital tumors were malignant and liable to recurrence. Even benign tumors would recur locally if any trace were left. It was but rarely possible to be certain of the nature of a tumor until after microscopical examination, and free removal of surrounding soft spots should therefore be routine practice, after exploratory incision in cases of doubt. With the globe retained the surgeon worked in an awkward, narrow pit, guided only by touch, without vision, and risk of recurrence was greatly increased. A recurrence might indicate the extension of the disease beyond the surgeon's control and a patient's life imperilled by his conservate surgery. The procedure seemed to him equivalent to removal of a scirrhus mammae without amputating the breast.

There was considerable mortality recorded after these operations. Finlay's list (Knapp Archives, 1895,) gave eleven deaths after sixty-eight operations, or 16 per cent. The universal cause of death was septic meningitis. The mortality was not really so formidable. Since 1872 only two deaths had occurred out of thirty operations, or about 6 per cent., the improvement being no doubt due to the improved methods of asepsis. The chief cause of danger in wounds involving a deep pit like the orbit was the collection of blood-clot, which readily decomposes. If the cavity were kept quite dry and plugged with aseptic tampons there should be very little risk of septic meningitis.

Myxo-fibroma was an excessively rare form of optic nerve tumor. The present case was the forth recorded example. Mucoid changes were very common in all forms of optic nerve tumors, 37 per cent. of Finlay's list of 117 being affected in this way. The vast majority of optic nerve tumors were growths of the sheath and not of the nerve proper, so that neuroglia, which was very prone to myxomatous change, had no part in them. Many hypotheses had been advanced, but none were satisfactory. Mr. Lawson suggested that the close proximity of these growths to the one udemal myxomatous tissue in the body, viz., the vitreous, was more than a coincidence. The vitreous was developed by an involution of the mesoderm into the upper end of the optic cup, which formed the choroidal fissure. If, during the closure of the fissure, a fragment of embryonic vitreous was excluded and afterward wrapped round by the mesoderm forming the optic sheath, all the materials were at hand for the formation of a mesodermic involution tumor, which would be expected to exhibit myxomatous tissue as a characteristic feature, just as dermoids always contained skin elements. The theory was advanced not to account for all tumors of the optic nerve, but only for a certain number in which myxomatous changes were found. An involution of embryonic fibrous tissue with the arteria centralis retina where it enters the optic sheath might possibly, as Braunschweig suggests, account for the origin of other varieties.

Mr. Herbert H. Folker (Stoke-on-Trent) reported five cases of toxic amblyopia due to lead which occurred among employes in the pottery district. 1. A female, aged 26 years, had worked in the dipping-house two years; on four occasions she had had symptoms of lead poisoning, colic, vomiting, and headache. Vision failed in the left eye and four days later in the right; the failure began with flashes of light and colored vision and rapidly proceeded to total blindness. The pupils were dilated and inactive, the optic discs were pale and blurred, the retina was œdematous, and there were several hemorrhages in it. There was some albumin in the urine. 2. A female, aged 20 years, six weeks after beginning work as a lithographer had headache and colic; after a year she had sudden total loss of color vision, followed by sensations of flashes of light. There was typical neuro-retinitis with hemorrhages. In this case vision improved. 3. A male, aged 16 years, employed in the dipping-house, after two years had diplopia with headache, colic and vomiting; the vision failed shortly after, and in six weeks he was totally blind. He also had colored vision for a time and flashes of light. The optic discs were very white and the arteries were reduced to white cords. He had a trace of albumin and a gum line. 4. A female, aged 18 years, employed in the dipping-house, after three years had headache and vomiting; the vision failed in one night; she had flashes of light of various colors. The optic discs were intensely white. 5. A female, aged 18 years, employed in the dipping-house, had had for ten months several attacks of headache, colic, and vomiting; then the sight failed, and in two months she was blind. The optic discs were white and the vessels were small. In this series of cases all other toxic agents were excluded. None of the patients who had worked in the dipping-houses responded to treatment, the case of the lithographer did; in the former the poison was introduced by absorption through the skin, in the latter by inhalation. With one exception all the cases experienced colored vision. Treatment was by iodide of potassium or strychnine by the mouth or hypodermically.

The following cases were shown:

Major M. T. Yarr, R.A.M.C.: Case with fundus changes and fibrous tissue formation in the vitreous, probably congenital.

Mr. Doyne: Case of pigmentation of the conjunctiva.

Mr. Treacher Collins: Case of monilethrix affecting eyelashes and eyebrows.

Dr. Galloway, in commenting on this last case, said that the disease was very rare and that it ran in families; this patient belonged to a family very well known to the dermatologists of London. The curious condition is due to atrophy of the medulla of the hairs at the internodal spaces.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT PHYSICIANS.

Meeting of November 17th, 1898.

Presentation of Cases.—By Dr. W. F. Southard: A case of atrophic and congenital excavation of both optic discs measuring 6 diopters.

By Dr. Geo. H. Powers: (1) A case of right proptosis with limited motion in all directions. There was chemosis and a relative scotoma occupying the lower half of the field, together with oedema and swelling of the upper portion of the retina. The condition was of very sudden onset. (2) A case of left convergent strabismus with excentric fixation inward. When first seen there was amblyopia; V. = $\frac{20}{200}$ barely, and extinction of the nasal side of the field. After tenotomy of the internal rectus there was complete restoration of the field of vision. (3) Wound of the cornea from a hatchet, extending nearly horizontally across the whole breadth of the cornea. The upper half of the iris was torn from its attachments and protruding from the wound, was removed. The wound healed kindly, leaving the lens perfectly clear.

By Dr. A. Barkan: (1) A case of discission and removal of the lens for high myopia (malignant) with gratifying visual results. The patient was a woman of 45, with O. D. M. = 19 diopters; O. S. M. = 21 diopters. V. O. D. = $\frac{20}{200}$, counting fingers at 2 feet with — 19D. V. = $\frac{6}{200}$. In the right fundus there were small opacities in the vitreous; extensive post. staphyloma surrounding the disc, and numerous clearly cut atrophic areas scattered over the background and reaching to the macula. A moderate discission was made in the substance of the lens, followed by the usual swelling and some ciliary irritation. Twelve days later linear extraction was done with a lance knife in the usual way, and the greater part of the lens matter removed. Result: V. with — 2.00 cyl. axis 90° = 10/200. Reads Snellen 1 at 8 centimetres with + 9.00s $\smile$ 2.00c axis 180°; counts fingers at 12 feet. (2) A case left of congenital microtia in a girl aged 10. The auricle consists of an elevated ridge about two inches long, the upper half being cartilaginous, and the lower, soft tissue, the whole having the appearance of helix and lobule attached to the side of the head without other parts. At the center of the cartilaginous portion there is a small depression about 3mm. in depth, and posterior to this a small rudiment of cartilage at about the lower border of the osseous meatus, the margin of which can seemingly be felt.

As usual in such cases, it is difficult to determine whether there is any hearing whatever. When the good (right) ear is tightly closed a whisper can be heard in the left ear at eight inches, using the hands as a funnel. Bone conduction is also doubtful.

Dr. Philip Mills Jones stated that he had seen a similar case in which equal difficulty had been encountered in determining the existence or not of hearing.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held December 13th, 1898, the President, Dr. W. F. Coleman, in the chair.

Dr. Emanuel F. Snydacker read a paper entitled *Some New Facts on the Etiological Organism of Trachoma.* He gave statistics showing the frequency, gravity and long continuance of trachoma. Of 324 new patients received as house cases at the Illinois Eye and Ear Infirmary from June

1st, 1898, to November 1st, 1898, 123, or about 38 per cent., were cases of trachoma. Other patients come and go, but trachoma patients remain interminably, so that of 41 patients now under his observation 23, or 56 per cent., are cases of trachoma.

Trachoma can never be called cured. The lids may become perfectly smooth, and the disease seem perfectly mastered, but in the course of a few weeks or months the patient will return with a trachoma which has all the characteristics of an acute disease. Of 50 cases of trachoma, in which he had made careful records, 38 were cases where the disease had lasted over two years, 13 where the disease had lasted more than five years, 7 where it had lasted more than ten years, and in one case it had lasted thirty-eight years. In the 38 cases which had lasted more than two years, there were only 4 who had had no corneal involvement. Of these, one was employed about the hospital, and consequently had been under constant medical care, while in another case it was very doubtful whether the disease was trachoma or not. In no case where the cornea has once become involved, either through ulceration or pannus, does the patient regain normal acuity of vision. In his series of 50 cases the average acuity of vision was 2/7, though this does not allow for refractive errors. Between the dates of June 1st, 1898, and November 1st, 1898, 122 patients were operated upon at the Infirmary. Of these operations 41, or 34 per cent., were necessitated by trachoma. These figures do not include scarifications. A patient who has once had trachoma is more or less unfitted for the active duties of life in the opinion of the essayist. Exposure to dust, heat, or bright light, residence in a malarial district, unhygenic surroundings, negligence in the use of the proper medicines may bring on an acute exacerbation of the disease at any moment.

The author goes into the literature of trachoma in a very exhaustive manner, quoting from Sattler, De Gama Pinto, Michel, Schmidt, Kucharski, Goldschmidt, Baumgarten, and many others. He also narrated his investigations with the trachoma nodule itself, subjecting it to the various methods for staining bacteria within tissues, and to see whether or not the micro-organisms could be found within the nodule. The methods he employed were the two well known ones for staining bacteria in tissue. First, staining with Loeffler's methylene blue and decolorizing with acetic acid 1-1000; second, the Gram-Weigert method. He prepared fifteen different sections according to these two methods, and in every case he found within the nodule organisms which presented striking morphological characteristics. These organisms were present in greatest numbers in the loose adenoid tissue of the mucous membrane. They were commonly seen in small groups, usually in the intercellular spaces, although he has observed them within the leucocytes, in the protoplasm of the epithelial cells, and at times in the blood vessels of the nodule. The organism had a capsule, but whether it was a capsulated diplococcus or a tiny capsulated bacillus, with heavily staining ends, neither he nor a number of other observers was able to state with any degree of certainty. Its size varied from .1½ to .2 millimeters in length, and from .5 to .6 millimeters in width. The organism was not decolorized by the Gram method of staining. The essayist tabulates the results of his studies of sections, smears and secretions as follows :

1. He found within the trachoma nodule in fifteen cases an organism varying in length from one-half to two millimeters, and from .5 to .6 mm. in width. 2. This organism was enveloped in a gelatinous capsule. 3. No other organism could be found within the tissues. 4. This organism was stained by the Gram method. 5. While seen only within the tissues or in smears, it was impossible to positively say whether this organism was a diplococcus or small bacillus. 6. The organism was usually found in the adenoid layer of the conjunctiva, most frequently between cells, though at times within them, very rarely in vessels. 7. It is quite abundant in the secretion of recent cases where no astringents or antiseptics have been used, but almost impossible to find after these have been used some time. 8. In the secretions it was possible to decide that the organism was a dot-like, capsulated diplococcus.

He next describes the task of getting a pure culture of the organism. He was successful in obtaining pure cultures, these being contaminated in only two cases.

For the sake of accuracy, the author briefly tabulated and recapitulated all his findings in regard to this organism, thus:

Origin.—Unknown. Seems to occur most frequently in malarial districts.

Form.—Round diplococci, which in the tissues and first bouillon culture are enveloped in a gelatinous capsule. In the tissues they lie in small groups, each organism separate from the others. In bouillon they usually are seen as isolated diplococci; at times they are seen in small clusters or short chains, though the clusters and chains are always composed of diplococci. At times the diplococcus is seen turned on end, so that only a single coccus appears. In this position it is often possible to see the capsule especially well marked. On solid culture media they simulate staphylococci; on gelatin they show an intermediate form.

Motility.—In the hanging drop the organisms exhibit a slight degree of motility.

Vitality.—Cultures die on culture media in about two weeks.

Aniline Stains.—Organism stains well with ordinary aniline stains; also by Gram method. Capsule does not stain, but septum between cocci seems at times to have an affinity for stains, especially for methylene blue, causing the organism often to resemble a bacillus.

Growth.—Grows rapidly in incubator, more slowly at room temperature. Bouillon becomes turbid in thirty-six hours. Abundant growth on serum in forty-eight hours. Grows somewhat slowly on agar, especially at room temperature.

Growth on Serum.—White, moist, membranous-like streak along line of inoculation, with a scalloped edge. Edges white, the center yellowish.

Growth on Agar.—Resembles somewhat the growth on serum. The edge exhibits the same scalloping. The growth on agar is more raised than that on serum. The difference in color between the center and the borders of the growth is even more marked. The center is distinctly yellow, while the borders are milk-like.

In Bouillon.—At the end of ten days white, sand-like deposit settles at bottom of tube.

In Gelatin.—Growth somewhat funnel-shaped. White, wavy, thread-like growth along the stab, consisting of small agglutinated globules; grows somewhat heavier toward surface, and on the surface forms a white membraneous growth which shows the same peculiar scalloping of the edges as the growth on serum. The gelatin liquefies very slowly on the surface, but not along the stab.

Oxygen Requirements.—Facultative aerobin.

Odor.—After developing one week on any of the culture media, and especially in bouillon, has a pronounced urinous odor.

The essayist compares his findings with those of other men who have investigated this subject, and especially of those whose results have in a measure coincided with his own.

Clinical Significance of this Work.—In the early stages of trachoma, and frequently, even after the lapse of some time, it is impossible by the methods now employed to state with certainty whether the case before us is one of that disease or not. Can a diagnosis be made with absolute positiveness? Unquestionably, yes. If one can find within the secretions or in the contents of the expressed follicles an organism such as he has described, he may with absolute certainty call the disease trachoma. Furthermore, he must use every precaution to prevent the patient from infect-ing others, for that organism, under favorable circumstances, will certainly cause the disease in others, no matter how mild a form of the disease the patient himself may exhibit.

Can the organism be found in enough cases to render it valuable? Again, undoubtedly, the essayist answers yes. Where one suspects trachoma there are almost invariably enlarged follicles. Squeeze out one of these follicles, smear its contents on a cover glass, fix them in the flame, stain them by Gram's method, and if a capsulated diplococcus is present, the case is undoubtedly trachoma; if it is not present, the case is in all probability not trachoma.

In his series of fifty cases of trachoma, in only seventeen cases were members of the patient's family afflicted with the disease. In cases where one of a married couple had contracted the disease, the other in nine cases escaped. This seems strange, when it is remembered how notoriously infectious trachoma is, and how it has been known to run through camps and institutions like wild-fire. There are, in the light of these investigations, several reasons for this. Where antiseptics are used the secretions soon become harmless, and may often with impunity be inoculated into other eyes. Then, again, the organism is very difficult to cultivate. If the soil is not favorable it soon dies. When he inoculated the human conjunctiva it was necessary to massage it into the conjunctiva; merely placing it in the sac proved of no avail. Undoubtedly, the conjunctivæ of debilitated individuals, especially of such as have suffered from malaria, afford a more favorable site for growth than those of healthy people, and undoubtedly where the disease spreads rapidly it is among the former class and from the secretions of those who have not been treated with antiseptics.

The period of incubation of trachoma is difficult to answer, even when one has watched the disease develop from day to day. The symptoms caused by the micro-organisms are certainly well marked by the end of the first week. By the end of the fifth week a diagnosis may be made from the aspect of the case.

He has now found the organism of trachoma in the tissues and secretions; he has obtained it in pure cultures; he has produced the disease and again obtained the diplococcus.

One task remains unfinished, which is by far the most practical and important of all, namely, the study of the toxins and anti-toxins. A description of his work on this subject he reserves for a future paper. Suffice it to say, that he inoculated one-half liter of bouillon with a pure culture of the diplococcus and allowed it to develop for ten days; this bouillon was then filtered through a Kitasato filter. This filtrate injected into animals and human beings causes local pain, redness and edema, with a marked temperature reaction; 4½ c. c. of this filtrate injected into the flank killed a guinea pig weighing 300 grams. If a guinea pig is treated with increasing doses of this filtrate, as fast as the temperature from the previous injection has subsided, it may receive twice the lethal dose without showing other symptoms than a temperature reaction. These facts lead the essayist to hope that an efficient trachoma anti-toxin may be found. If the action of anti-toxin is, as recent investigations tend to prove, a chemical and not a biological one, then surely a local disease like trachoma is an ideal one for the application of anti-toxin.

Dr. Henry Gradle: Discussion of the paper is scarcely possible, except on the part of those who are engaged in similar work, and who might possibly point out the pitfalls and snares into which the experimenter might have fallen. One who is only familiar with the work and writings of other men along this line is not as well competent· to discuss the subject. Dr. Snydacker's work undoubtedly represents a great deal of painstaking labor. But claims of having discovered the microbe of trachoma have been put forward by others, and they have never received full recognition. When the subject of trachoma was under discussion in various ophthalmological meetings, Sattler did not press his own claims of the discovery of the micro-organism of this disease. Michel's claim has likewise been poorly received. There can be no doubt from a modern point of view but what trachoma is a disease due to some parasite, but that it must necessarily be a bacterium is an open question. We are familiar with other forms of bacteria, such as the plasmodium of malaria, and the unidentified but visible microbe discovered by Nocard in pleuro-pneumonia of cattle. The fact that so many competent observers have hitherto failed to detect the bacterium characteristic of trachoma and capable of reproducing the disease, should caution us against having too fervid a faith in Dr. Snydacker's present statements.

Dr. Gradle asked whether the essayist has searched for the same microbe in other conjunctival diseases. A few years ago Burckhard, of Berlin, described some cell enclosures, evidently not bacteria, but presumably coccidia, as characteristic of trachoma. A short time afterwards he admitted that the same bodies could be found in a variety of other conjunctival diseases, and thereby dropped his claim of their specific nature. From that point of view it would be interesting to know whether similar microbes have been searched for in other inflammatory affections of the conjunctiva.

Dr. Emanuel F. Snydacker said he did some work on secretions about a year ago. Cultures were made from the secretions of eyes, especially such as were suffering from conjunctivitis; when it came to plating these cultures, the work led to such dimensions, so many kinds of germs were found, that he abandoned it.

As to the practical bearing of his present work, he cited one case. About a week ago a patient was admitted to the Infirmary, in whose case it was difficult to decide whether trachoma existed or not. The upper palpebral conjunctiva had the normal, smooth, yellow, glistening appearance of health, but there were follicles in the lower cul de sac. He squeezed out these follicles, smeared some of them on a cover-glass, fixed them, stained with aniline gentian violet, treated two minutes with Lugol's solution and decolorized with absolute alcohol. The characteristic organism was found.

The principal difficulty lies in the minute size of the organisms, and often in their scarcity. One must have a thin smear, a good lens, and a good light, and, above all, patiently search his whole specimen. In most cases of true trachoma the organism can undoubtedly be found. It is a far more reliable method of diagnosis than the microscopical diagnosis of gonorrhea. In gonorrhea there is absolutely no method of telling the gonococcus from the pseudo-gonococcus except by making cultures, and everybody knows the difficulty of cultivating these germs. He considered it impossible to say from morphology alone whether a germ is gonococcus or not, but the small capsulated diplococcus of trachoma may be diagnosed with the microscope alone.

Dr. Henry Gradle referred to the clinical aspects of the difference between trachoma and follicular catarrh. First of all, we must clearly recognize the existence of follicles independent of trachoma. If Dr. Snydacker can verify his claim that the microbe which he has described is characteristic of trachoma, its presence would settle the diagnosis in any given case definitely. Whenever such a microbe is present, we would necessarily have to call the disease trachoma, no matter how it appears clinically, exactly as we call a disease tubercular if the tubercle bacillus is present, no matter how different its appearances may be to the naked eye or under the microscope. But we have not yet arrived at that stage of certainty. Clinically, however, enlarged follicles can be found in a variety of conditions which have nothing to do with trachoma. First of all, in a large number of school children we will find enlarged follicles in the lower retro-tarsal fold, to a less extent on the upper lid, or in the upper retro-tarsal fold. These follicles persist for months and even years without developing into any of the lesions characteristic of true trachoma, without ever involving the cornea and without showing any progressive character. All present must have seen this condition and know that it is sometimes very intractable to treatment, but if we relieve the refractive condition, the patient is materially improved subjectively and the follicles cease to annoy him. We must recognize the existence, therefore, of true follicular catarrh, not identical in any way with trachoma from a clinical point of view, the difference being one of progressiveness and the absolute immunity of the cornea in true follicular catarrh. About eighteen years since there was a moderate epidemic of this form of conjunctivitis in Chicago. Dr. Gradle had a number of cases that were slightly follicular from the start; others were not, but became follicular, most of the cases yielding to applications of nitrate of silver. The follicular and non-follicular cases were due to some virus, because the affection occurred often in the same family. Three or four members of a family were affected within a short time of each other, the process of healing taking place rapidly under appropriate treatment or sometimes without it in some, while in other cases follicular development took place. Some of the cases developed a condition subsequently which brought up the question as to how far it was identical with trachoma. He recalled three cases which after some months of neglect presented large follicles, which, when seen at that time, could hardly have been distinguished from true trachoma. But the subsequent history was entirely different. All of these three cases he had originally seen; they had neglected themselves. They were better, after short treatment, but returned after some months, when large follicles were present. The difference between these follicles and true trachoma was this: They were situated more on the tarsal and less on the retro-tarsal portion; they were never sago-like, but yet resembling in many respects the follicles seen in trachoma. All of these cases were cured by a single expression with the Knapp roller forceps. Subsequent observation confirmed the absolute cure.

Dr. De Swartze had made examinations of the follicles of trachoma, and later on made a few examinations of the follicles of follicular conjunctivitis, using the same method which Dr. Snydacker employed, and had found no such organisms in any of the follicles such as Dr. Snydacker describes.

Dr. William T. Montgomery: We have all had experience similar to that related by Dr. Gradle with the follicular form of conjunctivitis, and from that fact had been led to believe that it is an entirely distinct type of inflammation. He had repeatedly by a single expression in cases of follicular conjunctivitis relieved the patient permanently of the trouble. The cornea is never involved in that form of the disease, which is a feature very different from what we find in true trachoma.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

We are pleased to learn that Dr. Edmond Landolt, of Paris, has accepted the invitation of the ophthalmic section of the Americal Medical Association to give an address before that body in Columbus next June. Dr. Landolt has chosen the title, "Some Disturbances of the Ocular Movements."

Owing to the pressure of other duties Dr. Casey Wood has resigned the position of editor-in-chief of the *Annals of Ophthalmology*, with which he has been actively connected for over seven years. It is possible that he may retain the special department of Italian ophthalmic literature, which he has edited for some time past.

At a recent meeting of the Washington Eye, Ear, Nose and Throat Hospital, it was announced that Bishop Satterlee had set aside the last Sunday in October as hospital Sunday, and that all collections on that day, in the local churches, would be donated to the hospital fund. The Directors are endeavoring to secure an endowment of $50,000. The total number of patients treated during the past nine months, ending September 30th, was 1,027; 553 white and 474 colored. 136 patients have been received into the hospital; 173 operations have been performed; $998 has been received from pay patients.

An English physician examined the physical condition of one hundred boys in one school, and found sixty-three of them subject to some deformity or other. Twenty had defective eyesight. This report would be more intelligible if a statement had been made as to what he meant by defective eyesight. If he meant some form of ametropia correctable by glasses, the statement is not very startling, but if he meant incurable lesions, it does not speak very well for the physique of the average English boy.

Dr. Helm of Cornwall, England, recently had an opportunity of examining the instruments which the "Indian Oculists" use in the couching of cataracts. They are two in number. The operation consists first in making an incision in the sclerotic behind the ciliary attachment of the iris. This they do with a huge old-fashioned lancet, which is usually rusty and very dirty. Into this incision the second instrument is inserted, namely, a large copper probe with a conical end of the size of a No. 4 Couper's lacrymal probe. This is passed through the pupil at its upper portion and the lens is made to "lie down" as they express it. Sometimes they fail, and, as in a case seen by Dr. Helm, the lens slips through the pupil.

Attention is called to the very excellent work of Dr. S. Seligmann of Hamburg, on the microscopical examination of the eye. It is published in Berlin by S. Karger, and bears the date of 1898. It contains 240 pages and it is to be hoped this work will soon be translated into English. Dr. Seligmann thoroughly covers his subject and gives specific instructions as to where and how to get the best animals' eyes for the different methods and examinations; what stains to be used, and what should be their character, and many interesting facts, too numerous to mention. Any one desiring to do this kind of work can illy afford to be without this incomparable book.

The first regular meeting of the Midland Ophthalmological Society for the current season was held the evening of October 10th at the Coates Hotel, Kansas City, Mo.

The essayist of the evening was Dr. J. H. Thompson, who presented a very well prepared paper on "Retinal Hemorrhage." It was generally and favorably discussed by the members.

Dr. W. C. Tyree described the removal of a piece of steel from the vitreous with the great Haab magnet, in New York City. The efficiency of the instrument is so great that he felt justified in investing $300 to have one sent here.

The following officers were then elected for the ensuing year: Dr. W. C. Tyree, President; Dr. J. W. Sherer, Secretary; Dr. Geo. E. Bellows, Treasurer.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, FEBRUARY, 1899. No. 2. NEW SERIES

ORIGINAL ARTICLES.

BLINDNESS FOLLOWING THE INTOXICATING USE OF JAMAICA GINGER—REPORT OF SIX CASES.*

BY HIRAM WOODS, JR., M.D.

BALTIMORE, MD.

Illustrated.

So far as I know, the only recorded case of toxic amblyopia thought to be due to Jamaica ginger is published in the OPHTHALMIC RECORD for November, 1897, by Archibald G. Thomson of Philadelphia. It has been my fortune to see four such cases, and, through the courtesy of personal friends, I have notes of two others. These six are appended.

Case 1. The patient applied for treatment at the Dispensary of the Johns Hopkins Hospital, and for notes I am indebted to my friends Drs. William Osler, Henry M. Thomas and Samuel Theobald.

John H., 32 years old, bricklayer by trade and sometimes oyster dredger, was seen January 27th, 1898. The following is copied from the blank used in the Dispensary: "He had always been well as a boy; no disease except measles; denies gonorrhœa and syphilis, but admits exposure; slight rheumatism in legs during last year; used to go on an occasional spree, but does not drink now; tobacco, five cents' worth a week. In December, 1896, he was on an oyster boat down the Bay. He fell in with a lot of men who were drinking Jamaica ginger, mixing it with cider. It was Christmas week, and he drank for five or six days. When the cider gave out they mixed the ginger with water. Patient said that he had heard that it was a common thing for men on the eastern shore, about Oxford, to lose their sight after drinking Jamaica ginger for several months. Personally he had known of but one case, which recovered. The first trouble noted with vision was that oyster shells, as they dropped into the water, looked like drops of blood. Next morning he could not see a match held in front of him, but could distinguish large objects. He now became totally blind, and remained so for four days. Then sight gradually came back, and in four weeks he was able to read. At this time he spent six weeks at the Marine Hospital. Two weeks after leaving the hospital he had a second attack, since which vision has been growing gradually worse." The report of the ophthalmoscopic examination, made by Dr. Mills, is: "Gray atrophy of both optic nerves.

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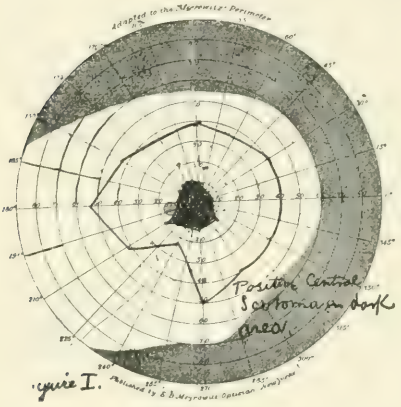
*Read December 15, 1898, before the Baltimore Ophthalmological and Otological Society.


Adapted to the Meyrowitz Perimeter
Positive Central Scotoma in dark area
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gure I.

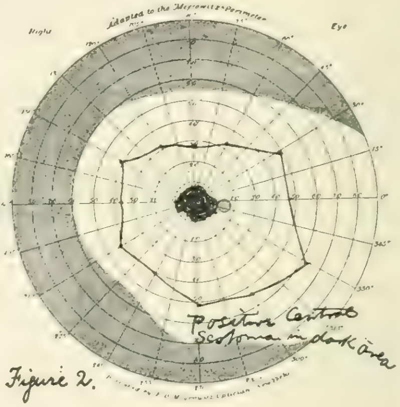

Right
Adapted to the Meyrowitz Perimeter
Eye
Positive Central Scotoma in dark area

Figure 2.

Pupils react very sluggishly to light and freely upon accommodation." His fields are also given (Figs. 1 and 2). A note on the perimetric chart says: "No vision in shaded portion. Can see MOVING object 10° to 15° outside of field marked, which is for stationary disc." There is no record of either visual acuity, or ability, if he had it, to recognize colors.

Quoting further from Dr. Thomas' notes in the Neurological Department, I do not find mention of the amount of ginger the patient took. On January 27th there is this: "Pupils are contracting and dilating all the time. He has sharp, shooting pains in legs, mostly about knees. They come and go very suddenly. They are worse in bad weather, and have persisted about a year. Frequently has sharp pains in stomach. No bladder trouble. No difficulty in walking till last night, when he noticed he was staggering as if drunk. Knee jerks seem about normal. Romberg symptom not given." The patient was put upon 1/32 grain sulphate strychnia four times daily. On February 5th Dr. Thomas notes:

"Distinguishes bright colors with left eye fairly well." The colors used are not specified. On February 7th: "To-day reflexes very active; good appetite, sleeps well, and does not drink. Smokes only two ounces of tobacco a week. Condition of eyes about the same. He cannot see to read even the headings of a newspaper, nor distinguish faces unless very close. He cannot then see all face at once. Vision is best at periphery, and to see best he has to look sideways. Pupils react actively to both light and accommodation. Gray atrophy of both nerves; no cupping of discs." The last note is dated March 21st, and is: "No improvement in vision. Reflexes active." It is evident that Dr. Thomas excluded commencing tabes. The occasional lancinating pains seem the only general symptom, while of the eye symptoms the constant alternating contraction and dilatation of the pupils noted but once—January 27th—is suggestive of the nuclear irritation preceding pupillary rigidity. Knies ("The Eye in General Diseases") quotes a case of Uhthoff in which this existed. I am inclined to think this one observation of little account in reaching a diagnosis. There seems no doubt that there occurred in December, 1896, after the ginger spree, an acute optic neuritis, causing at first total blindness, which recovered, as such cases usually do (Fuchs Text Book), later relapsed, and finally resulted in atrophy of the macular and peripheral fibers. The case bears a striking resemblance to Thomson's.

Case 2 occurred in the private practice of my friend and hospital associate, Dr. Francis M. Chisolm. Dr. C. has kindly written for me notes from his case-book, which I insert in full, with points obtained in conversation:

"November 8, 1898. I. S., age 47, occupation stock herder. The sight of both eyes has been bad since February. Everything looks smoky and indistinct. Before that time his sight had been good. The trouble began after getting up one morning, when he had a severe attack of nausea and vomiting with sharp pains in his head; sudden blindness came on during this attack. Since that time his sight had gradually improved to a certain point, after which no further improvement or deterioration has taken place.

"The patient admitted that he smoked a great deal, drank occasionally but not to excess. There was no specific history. His physician, who came with him, said, however, that the patient had always been a heavy drinker and smoker, to such an extent that if he could not get whiskey he would drink anything that had alcohol in it; that he had been drinking ginger with cider during the last three years. That for three weeks previous to the attack of nausea he had been on a continued spree and the day before the attack, had drunk three or four half pint bottles of ginger essence, besides a quantity of whiskey and anything else that came to hand. He was likewise smoking continuously.

"Examination: V = counting fingers at about six inches distance, which is done by the upper field as he directs his eyes upward at an angle of about 30° from the horizontal. There is chronic inflammation of the conjunctiva both ocular and palpebral. The corneæ are clear. Anterior chamber normal; pupils normal size and respond readily to light. Has fair convergence and accommodation reflex. Lens and media clear, and discs slightly pallid, with contracted furred edges, especially left. Arteries shrunken in caliber; veins normal; fundus otherwise normal. The left eye shows the changes a little more marked than the right, but in neither is the pathologic picture what one would expect to find with so much impairment of sight after for so long a time. It was difficult to get any information about his color sense. His field for white was very uncertain but the accompanying charts give about the range. Reflex at patella abolished. No ankle clonus. On standing with feet close together there is some wavering but no inclination to fall.

"The patient states that the last few months he has been troubled much with indigestion, and that although usually strong, at times his muscular system seems to give way completely, leaving him almost collapsed.

"Hearing is about 45/60, more acute in the left ear than in the right. Although a heavy drinker he would go sometimes weeks without touching a drop."

Dr. Chisolm tells me that the only definite thing about the man's color sense was inability to recognize red; that perimetric examination was difficult on account of persistency in looking upward or toward the disc; that there was but one examination. He is sure, however, that, so far as one examination can prove it, there was no vision in either nasal field.

The relative, negative scotoma, which doubtless existed, was possibly due to tobacco or to this agent combined with alcohol. The loss of patella reflex and the unsteadiness in standing with closed eyes, are, at least, suggestive of lesion in the central nervous system. So is the bi-nasal hemianopsia. It is to be remembered that the man was unconscious of defective sight until after the ginger drunk in February. The symptoms immediately following this are strikingly like those in the cases which I saw; headache, nausea, total blindness, slow recovery with permanent field defects and scotomata, or permanent blindness. It looks as though there was a retro-bulbar neuritis after the ginger intoxication, engrafted, possibly, on a tobacco amblyopia. This seems as far as we can go with certainly. The general symptoms of lesion of the central nervous system are indefinite, and the possibility of bi-nasal blindness, of which the patient was unconscious, is questionable. I have never seen a case of *bi-nasal* hemianopsia; but I have seen three cases where this condition existed in one eye. The persons were definitely conscious of the defect. I think, too, that the contraction of the infero-nasal field in chronic glaucoma is usually felt. That this very rare form of blindness has existed in Dr. Chisolm's patient only since February seems probable; and yet, in view of the rarity of the affection and difficulties in examination, it is a matter of regret that there was but one field test. Field charts are given. (Figs. 3 and 4.)

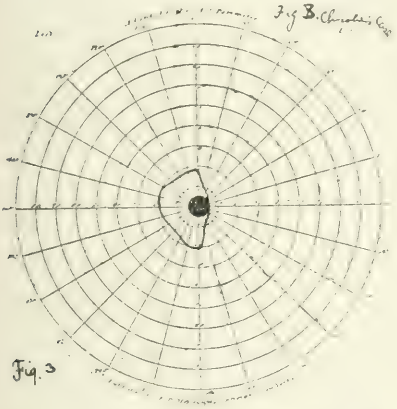


Fig. 3

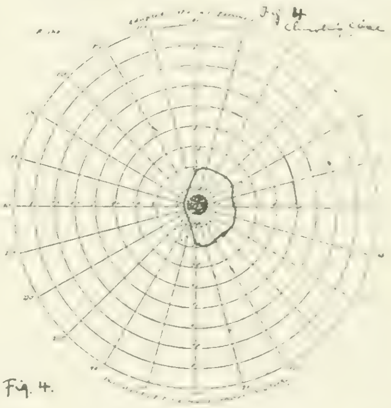


Fig. 4.

The next four cases came under my personal observation.

Case 3.—This was the first case I saw, and I think the first patient in this State in whom a causative relation between ingestion of ginger and blindness was suspected.

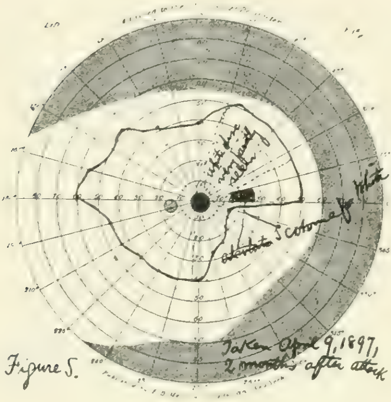
John K., 38 years of age, workman in a flour mill in Cecil County, was brought to my office March 6, 1897, by Dr. Samuel T. Roman of Conowingo. K. is a married man, and has two healthy children. His early history is unimportant. Ten years ago he had gonorrhœa; but all traces long since vanished. On Saturday, February 6th, he had worked in the mill, with others, carrying property to a place secure from a threatening flood. He wore hip gum boots, and said he was "wet only from perspiration." This work lasted till three o'clock Sunday morning. Once during the night he turned the drafts on the stove in the mill, and while lying on the floor, with head toward the stove, fell asleep. He awoke in a half hour and immediately resumed work on the flooded lower floor. He attributed his troubles to taking cold during this nap. Went home and to bed about three A. M. Sunday. Slept till eight, and remained home all day, taking a walk in the country during the afternoon. He "felt tired," but nothing more. After a good sleep Sunday night, he resumed work Monday. In the morning he cleaned away drift ice, and worked in the mill during the afternoon. Twice he took a paper to read, and fell asleep almost at once. He was awakened Monday night by nausea. There were several attacks of vomiting, and diarrhœa, with gastro-intestinal cramps and severe headache. During the last of these vomiting spells, as he recalled, "sight went quick as a flash." In a few minutes it returned, disappeared, and in this condition he said he "became unconscious." He awoke Tuesday morning, totally blind, and was told that he had been unconscious, that he could not be roused, and that Dr. Rowland was at his bedside. Dr. Roman told me that he was called in consultation the same afternoon, and confirmed this history. Dr. R. said, further, that there was slight elevation of temperature, rapid pulse, sputum tinged with blood, while the conjunctivæ were injected, pupils widely dilated and inactive to light, and man totally blind. Blindness persisted ten days. Then there came periods of vision, when he would see objects and persons, alternating with spells of total blindness. The latter soon became "only instantaneous." Improvement had continued to the degree present when I saw him. For two or three years K. had gone on occasional sprees. He said these were no more frequent than every four or five weeks, and occupied Saturday night. He was generally drunk by bedtime. Very seldom had he drank during the week or on Sunday. The beer or whiskey, brought illegally into the county, was consumed, as a rule, Saturday. If any were left over, Sunday morning was devoted to its disposal. When beer and whiskey were not obtainable alcohol, diluted with water, was used. Once, two years previous, he and a companion had drank a pint of Jamaica ginger. Beyond intoxication, they had felt no effects. Ginger, he said, was commonly used for this purpose, and he had heard of a man, now dead, who had been temporarily blind after a ginger spree. K. was a pipe smoker, usually three, and sometimes ten pipes a day being his allowance. Prior to February 6, 1897, he had not drank anything at all for four weeks. During the Saturday night in the mill he drank ginger, pouring it from a large bottle, and adding water. So did the other workmen. Four or five ounces he is sure would cover the amount he drank. He took one drink of alcohol.

This was about a half ounce. He was positive that there was but one drink apiece of alcohol, for the quantity on hand was small. Ginger was also drunk Sunday. It is impossible to say how much: but something less than a pint altogether with the half ounce of alcohol, seems a generous allowance for the whole spree. Examination of heart and urine was negative.

My case-book notes concerning his condition March 6, 1897, are: "Gets about with difficulty. Pupils widely dilated, no response to daylight, feeble to reflected or oblique illumination. Left slightly more active. Respond to A. Tn. No external injection, or impairment of motion. Media clear, nerves possibly a little pallid, no alteration of retinal vessels. Slight haziness at outer border left papilla. Functional test: Vision about 3/200 each eye. Fingers, held, directly in front, are counted at 3′ by the left, 2″ by right eye. He loses fingers on motion either way, and in counting seems to see only one at a time; 19 Jaeg. deciphered by left eye. Doubtful recognition of colors, central fixation. Are lost as soon as seen. Impossible to secure fields, though he seems to see a little better toward the left." The man was put on rapidly increasing doses of KI. I next saw him April 9, 1897. Vision for letters was unchanged. Fingers were uncertainly counted at 10′ by left, 20″ by right eye. No colors were recognized. K. came to my office at my request, November 10, 1898. Central vision is unaltered, and color recognition is lost. Jaeg. 12 is picked out with left eye. He spoke during perimetric examination of fading of disc, and said it was like a "confusion of sight" he now and then experiences. He says he is better, and does mill work without much trouble. This is due to improvement in the fields. There is atrophy of the papillo-macular fibers, well marked, and the rest of the papilla has not changed in appearance.

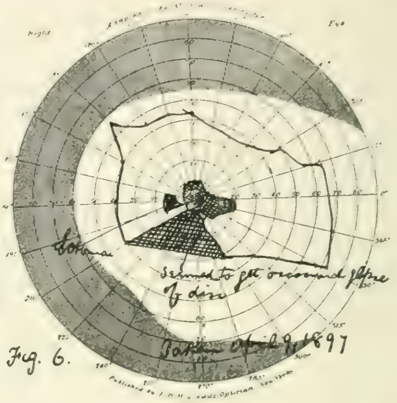
The fields of vision were obtained April 9, 1897, and November 10, 1898. They are given in Figs. 5, 6, 7 and 8. Figs. 5 and 6 show contraction for form, with rather sharp reëntering angles in each infero-nasal field. In left eye this borders on a small positive scotoma, to the nasal side of the fovea. Above the scotoma there is an area of faint sight. In Fig. 6 (r. e.) the reëntering angle unites with a central scotoma, extending outward to, and including, the normal blind spot. There was a second small nasal paracentral scotoma. Color vision was lost. In November, 1898, the following changes were observed: (Figs 7 and 8.) There is less contraction, with special improvement in the infero-nasal fields. The small nasal scotoma in the left eye (Fig. 7) has cleared a little at its nasal end, while it has broken through into the faint area toward the fovea. The faint perception in upper nasal field has cleared. In right eye (Fig. 8) the fovea has regained vision, the small nasal scotoma has disappeared, while that in temporal field has enlarged.

Case 4.—James C., age 56, of Howard County, Md., shoemaker by trade, and, for a year prior to June, 1897, mail carrier in his district, was sent to the Presbyterian Eye and Ear Hospital on Thursday, June 23, 1898, by Dr. J. W. Hebb. C. was entered in the service of my friend, Dr. Herbert Harlan, who kindly permits me to report the case. C. had always had good health, and worked steadily at his trade. The only illnesses in his history were a railroad accident in 1875, injuring his head, and a slight sunstroke the same summer. No permanent ill effects were experienced. He denied syphilis, and there was no evidence of the



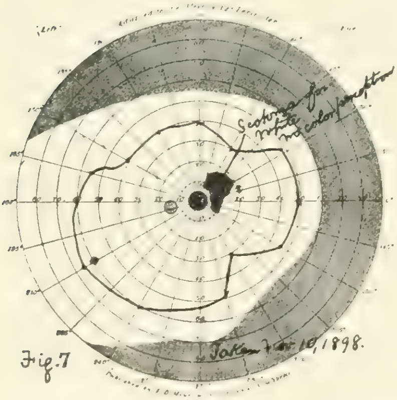
Taken April 9, 1897, 2 months after attack

Figure 5.



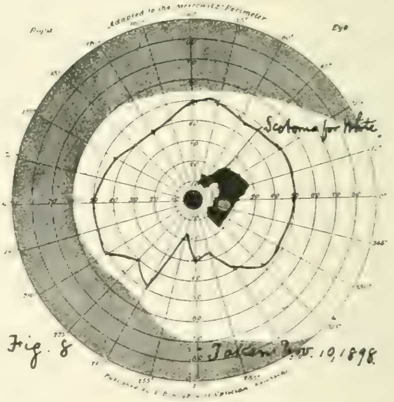
Taken April 9, 1897

Fig. 6.



Taken Nov 10, 1898.

Fig. 7



Taken Nov. 10, 1898

Fig. 8

disease. His hearing, for years somewhat defective, he thinks has been worse since June. On November 3 it was: for watch R. ear $\frac{8}{48}$, left ear 7/48. Low forks were heard readily, aerial conduction exceeding bone. Aerial conduction for high forks was somewhat lessened, but beyond these suggestive evidences there was no proof of labyrinthine trouble. For ten years or more C. has been in the habit of going on sprees. Neither he nor his son thought this was more frequent than two or three times a year. When it was difficult to obtain liquor, it was not uncommon in his locality to drink ginger. It was also used to "taper off" after a spree. He had not used it extensively in either way, and had never known of any harm from it. He obtained about a pint of whiskey on Friday, 10th of June, and drank it by Sunday the 12th. The next day he bought four bottles of Jamaica ginger at a country store. From the maker of this particular ginger, I learn that each bottle contains a little over one and a half ounces. During the three days (to Thursday the 16th) he drank this six ounces or so. He was over his spree, and, though feeling below his usual condition, resumed work. On Saturday, the 18th, forty-eight hours after he had drunk ginger, and five days after touching whiskey, while weeding an onion patch, he suddenly was seized with giddiness, and "a cloud came over his vision." He was soon attacked with gastro-intestinal pains, vomiting and headache. The clouding of vision seemed to clear for a while. He sat a little time under a tree, and then walked into the house. Sight was extremely dim, the headache and nausea continued. He slept poorly that night on account of headache and intestinal pains. The next morning he was totally blind. When we saw him on the 23d the pupils were widely dilated and inactive. Light perception was doubtful. Ophthalmoscopic appearances were absolutely negative. He was put on pilocarpin, and later strychnia, without benefit. A month later light perception was lost. Beginning atrophy was evident. I examined the man at my office on November 3d. Both nerves are atrophied. Otherwise the fundus is normal. Pupils are widely dilated and inactive. For a month after he was taken ill he had occasional glimpses of sight, but these became only momentary, and finally ceased. Urinalysis failed to show any abnormality. It may be added that tobacco was used very sparingly.

CASE 5.—G. A .B., age 32, a practicing physician and resident of Maryland, was admitted to the Maryland University Hospital on Friday, July 29, 1898. The record says that when he entered he "could see slightly with the left eye." He had no l. p. in either eye when I saw him Saturday, 30th. The following history is made from notes taken at the hospital.

and conversations held with B. by Dr. Harlan, in whose care I left the man during August, and myself. Both Dr. H. and I have known B. for a number of years, Dr. H. being pretty familiar with his career. Drink has been his curse. His remark to the hospital attendant that he "got drunk whenever he came to town or had a chance," is, I believe, literally true. His present troubles began on Tuesday, July 19th. While not, I think, of great importance, it is as well to say that while oystering on July 3d he was overcome with heat, from which he thoroughly recovered. On the 19th he began drinking, and drank three pints of whiskey by the 22d. He then concluded to taper off on ginger, cinnamon, etc. Between the 22d and 27th he drank six or seven bottles of ginger and some "cinnamon," but no whiskey. He could not get it. On Wednesday, 27th, he says he felt "about as usual." He went to a baseball game, and drank seven bottles of ginger between two and four o'clock. Later he attended a ball. Oysters, ice cream, and possibly other refreshments, were partaken of. The next day, he said, he stayed in bed. He was not sick, but felt indisposed to move around. During Thursday night he was seized with atrocious headache, vomiting, and gastro-intestinal pains. These continued all night, till he fell asleep, toward morning. On awakening Friday morning he was totally blind. He started for Baltimore that day. Part of his trip was made in a canoe. He started from home blind. He said he saw the rigging in the canoe, men, etc., and walked alone into the hospital. He was totally blind, as said, when I saw him the afternoon of the 30th. There was, possibly, a low grade of neuritis. The veins were a little engorged, and the papilla presented the appearance of haziness not infrequently seen in uncorrected ametropia. The student's record on the day of entrance, so far as it refers to vision, is: "Faint perception of objects in temporal field. Able to distinguish objects with left eye, and to count fingers, not in the center of vision, but to the left." He was given a purge and pilocarpin. Later strychnia was administered. On the 31st I found he had l.p. and some reaction of pupils to light. I left town on August 1st. L. p. was lost on the 1st of August. On the 2d he saw light, and on the 4th discerned persons moving about the ward. These variations from blindness to useful vision continued while he was in the hospital to August 8th. His urine, examined in the hospital, had a sp. gr. 1020, acid reaction, traces of albumin, hyaline and granular casts. August 9th he saw Dr. Harlan, who found r. e. l. p. only, l. e. nothing. "Discs were choked, and vessels, particularly veins, congested." Dr. H. renewed the pilocarpin. B. had been taking strychnia. On the 19th he counted fingers each eye at a few inches. On the 26th he made out large objects some feet away; saw a chair, and walked to it. Dr. Harlan's last notes are dated September 16th and 28th. On the 16th they are: "Getting worse. L. p., only each eye. On 28th, "No light, discs becoming clearly atrophic." I saw him on the 16th and 28th September. He told me that a few days previous he had seen persons walking about at a distance of twenty feet or more. There was no l. p. either eye. Again on the 28th he claimed he could see a cane I held before him. There was no l. p. either 'eye, nor pupil reaction. At Harlan's office a few minutes later, there was the same failure to see light. Both nerves are atrophied.

It is interesting to note that this man was positive that strychnia always damaged his sight, and that pilocarpin temporarily helped him.

CASE 6.—R. T., 52 years of age, was admitted to the Maryland University Hospital, August 20, 1898. He was totally blind. I was away at the time, and the following history is collated, from hospital notes, conversations with the patient, and a letter from Dr. Fazenbaker of Swanton, who first saw him after loss of sight. T. is a robust man, and has for many years been working in the repair department of the Baltimore & Ohio Railroad at Swanton, Md. He is a father of ten children. Has never been seriously ill. Chronic constipation seems to have been his one ailment. Dr. F. writes that he has known the man for two years, and from his own observation and information from reliable sources, says he is, and for twenty-five years has been, a periodical drinker. "He will drink anything that will intoxicate: Bateman's drops, Jamiaca ginger, lightning hot drops, essence of peppermint, essence of cinnamon, etc." These are articles named by Dr. F. as commonly sold substitutes for liquor in Garret County. Dr. F. first saw T. professionally Thursday, August 4th. He learned that he had been "staggering drunk" for a week prior to this. T., on the other hand, assured me that until the afternoon of Saturday, July 30th, he had drunk nothing since Christmas, 1897. On this Saturday afternoon, when returning from work, he began drinking peppermint and ginger in a store. He seems to have bought twelve or fifteen bottles of the two, ginger predominating. Ten of these were drunk Saturday, and two or three Sunday morning. The others were broken. Each bottle apparently held about two oz., so the amount consumed may be approximately calculated as twenty to twenty-five oz. Dr. F. writes that T. is an enormous eater during his sprees, and that this spree was no exception. He has also been an inveterate pipe smoker of strong tobacco. T. gave me an indefinite history of an eye trouble several years back, apparently catarrhal conjunctivitis. While little reliance is to be placed on his statements, there is no evidence that sight was in any degree impaired before this attack. He did his regular work, read the paper, etc. T. slept nearly all day Sunday and during the night. Soon after awaking Monday morning he was seized with nausea, gastric pain, and headache. This continued most of Monday. Attention was first called to his eyes, he told me, by their "paining if he touched or moved them." He noticed "spells of dimness" during the afternoon. He fell asleep sometime early Monday night, without, he said, taking either medicine or more intoxicant. When he awoke Tuesday morning vision was very dim, and soon he lost sight entirely. Barring his blindness, he felt well. He claims to have stayed at home from this Tuesday to Thursday, when he sent for Dr. F. He drank nothing these three days, and was totally without vision. Dr. F. so found him Thursday, with widely dilated pupils. As a purgative T. was given a half pound of Rochelle salts. Dr. F. says that all was taken before an action was obtained, and that T. told him such doses were common things with him. Strychnia constituted the active part of his future treatment. He stayed at home three weeks, when Dr. Henry McComas, of Oakland, one of the railroad surgeons, sent him to the University Hospital. T. claimed that during these three weeks he now and then saw a little. On admission to the hospital, my assistant, Dr. Edward E. Gibbons, found a low grade of neuritis, with probably commencing atrophy. He put the patient on pilocarpin. When I saw T. on the 30th of August both nerves were atrophic, while haziness about the edges indicated slight papillitis. He stayed in the hospital till September 28th. During this time he showed momentary evidences of sight on several occasions. Once he saw, or so claimed, the white apron of the nurse on the right side of his bed. Only once was I able to evoke light perception. He pointed to a candle on his right side, the left eye being closed, lost it when moved into another field, and saw it when brought back. When he left both nerves were atrophic, and he was without light perception. Pilocarpin, and later strychnia were pushed to physiological effect without benefit.

Dr. McComas has tried to procure me some of the ginger, peppermint, etc., sold at the shop where T. obtained it. His messenger was known to the proprietor and sale refused. Dr. Fazenbaker wrote me he would send a bottle if he could get it. This is three weeks ago, and apparently his efforts have been equally futile. Dr. F. writes that though the intoxicating use of such things as previously mentioned is common, neither he nor any physician in the neighborhood has seen a similar case.

In studying these cases with reference to the lesion present and its cause, Thomson's case can be advantageously added. They may be regarded (1) with reference to their history and previous condition. All of the seven, except Chisolm's patient, were periodical drinkers. He was addicted to sprees in addition to the daily moderate use of stimulants. In only two (cases 2 and 6) was tobacco used immoderately. In but one (5) was there systemic trouble (albuminuria with casts) to which blindness could be attributed even indirectly. The manner of its appearance was entirely unlike the usual ocular manifestations of chronic Bright's. In only one (Chisolm's) was there reason to suspect a previous toxic amblyopia. It seems safe to conclude that in none of the seven were there conditions apt to produce such effects as followed the ingestion of the ginger. The cases may be further studied from the standpoint of intoxicants employed. Jamaica ginger only was used in Thomson's and Case 1. Case 6 drank ginger and other substitutes for liquor. A half ounce of alcohol was the sole intoxicant besides ginger used by Case 3. Cases 4 and 5 had drank liquor five and seven days respectively before the onset of eye symptoms, had been over its intoxicating effects several days, and had imbibed freely of ginger only and of ginger and other adulterated drinks, just before blindness came. Case 2 drank whiskey and ginger indiscriminately to the last. It is seen that ginger is the only intoxicant used by all; that, barring the half ounce of alcohol in Case 5 (which probably had little influence) and the whiskey used by Chisolm's patient, ginger and other adulterated alcoholic drinks were the only agents used in immediate connection with the appearance of blindness. A third point of interest is the mode of onset. Save in one case (1), the first evidences of trouble were gastric pain, nausea, headache, twelve to forty-eight hours after ingestion of ginger. Then came dimness of vision, rapidly followed by total blindness.

Regarding the nature of the lesion, Thomson thinks it is an acute retrobulbar neuritis. Attributing, as he does, the whole picture to alcohol, he blames the dimness of vision on the first day to an alcoholic "central scotoma, negative in character, for color, not form." He attributes the increasing blindness to rapidly increasing pressure on axis cylinders, improvement after several days to absorption of the effusion, the macular bundle remaining more seriously affected on account of its deep situation in the nerve, and consequent exposure to greater pressure. The permanent central blindness he attributes to consecutive atrophy of the macular fibers. In two of my cases, both of which went on to complete atrophy, the neuritis was far enough forward to show as a papillitis.

Symptoms of acute retrobulbar neuritis, as given by authors, correspond closely to observations made in all these cases. Fuchs (Text-book of Ophthalmology) says: "The *acute* form of retrobulbar neuritis is characterized by the suddenness with which the disturbance of vision develops. Within a few days all perception of light may be abolished. Externally—at most the pupil is dilated. These symptoms are often accompanied by violent headache, or by dull pain in the orbit, the latter being aggravated if the patient moves his eye or if the attempt is made to push it back in the orbit. The disease usually goes on to a complete or partial cure. In the first case the sight becomes normal again, in the second case a central scotoma generally remains." These symptoms are practically the same as given by Noyes, Swanzy, and others. An interesting symptom not quoted, but noted in these cases, was the occasional sudden returns of vision, soon disappearing.

The etiology of the retrobulbar neuritis in the cases narrated is not, to me at least, clear. Fuchs says the "known causes" of the acute form are: "Great chilling of the body, excessive exertion, acute infectious disease, such as measles, influenza, angina, suppression of the menses, lead poisoning." Thomson attributes the blindness in his case to alcohol, made, he thinks, more toxic by the impurities it contained. He says: "First, from the profound poisoning the patient was subjected to, we have an acute interstitial retrobulbar neuritis, or effusion into the sheath of the nerve, affecting, as alcohol always does, the papillo-macular bundles of fibers." With the free ingestion of alcohol, pure or impure, immediately before the attack, such reasoning is natural, and I am far from saying incorrect. But this explanation cannot be accepted without question. It is opposed both to what we know of the etiology of *acute* retrobulbar neuritis, and of alcohol amblyopia. Speaking of the former, Noyes says: "In considering the lesions of the various portions of the nerve we have two groups of cases, one inflammatory, and one toxic. The former may be chronic, subacute, or acute. The latter is always chronic, and is due in the great majority to alcohol or tobacco or both." Of the effects of *acute* alcoholism upon the eye, de Schweinitz says: (Toxic Amblyopias.)

"In so far as the visual effects are concerned, the acute cases may be dismissed with comparatively short notice, inasmuch as, except in rare instances, the visual phenomena are of temporary character, and amblyopia, if it occurs at all, is exceedingly uncommon. The ocular symptoms consist chiefly in paresis of one or other of the external ocular muscles, occasionally permanent in its results, owing to lesions in the nuclear centers and an inhibition of the iris movements secondary to the deep narcosis, caused by the direct action of the drug upon the brain cortex. Now and then acute alcoholism seems to have been responsible for almost complete blindness without ophthalmoscopic change, rapidly disappearing under antiphlogistic treatment and total abstinence."

Again, Wood says: "It is well established that long-continued and frequent indulgence in small quantities of spirits is more deleterious to eyesight than occasional sprees." It was in victims of *chronic* alcoholism that Uhthoff found 17.8 per cent. with amblyopia or some pathological condition of the nerve and retina. (Casey A. Wood, Toxic Amblyopia.) Three of my cases went on to total atrophy. Wood (loc. cit.) thinks it is at least questionable if the toxic agents can produce atrophy of the nerve. He thinks it highly probable that an atrophy of the nerve, following a toxic central amblyopia, is an association, and not a later stage of the former.

The authors quoted are confirmed by others, and it is unnecessary to prolong the paper with quotations. While blindness, such as seen in the cases here narrated, cannot be said NOT to follow acute alcoholism, such an occurrence is doubtful. de Schweinitz quotes Mengin, in turn quoted by Knies, as authority for the statement that blindness may follow the use of *methyl* alcohol. I recently heard of such a case, said to have occurred on the relief ship "Solace" during the late war with Spain. It cannot be stated that methyl alcohol was *not* used, and in only one case (4) am I sure that the ginger was made by a reputable firm and probably free from impurities. Both de Schweinitz and Knies mention Knapp's case of detachment of retina following the drinking of a glass of whiskey by a myope. But with all allowance, it must be admitted that visual disturbance from *acute* alcoholism is far from general recognition. Not only so, but the extent of *primary* reduction in vision, narrowing of peripheral fields where some vision was ultimately preserved, position, size and nature of the scotomata, rapid atrophy in three of the cases—all are atypical of alcohol blindness. Again, granting, as is probably the truth, that the macular fibers were first affected, it is unnecessary to assume a TOXIC cause. Noyes speaks of ACUTE retrobulbar neuritis (never, as already quoted from him, the result of *toxic* ingestion) affecting only the central fibers, and causing visual defect at the middle of the field: either a color, scotoma, or absolute scotoma. (Noyes, Diseases of the Eye.) It seems to me, then, that, although alcohol cannot be satisfactorily excluded, nor a thorough explanation given of the cases, leaving alcohol out of account, there are positive obstacles to accepting it as the fundamental cause of the amblyopia.

Has the delay after ingestion of ginger, with the gastric disturbance, special significance? Was the latter only the sick stomach following a debauch; was it a manifestation of an acute disturbance in the eye structures, akin to the nausea of acute glaucoma, or did it mean some putrefactive process, resulting in the formation of toxines capable of producing other disturbances? This question is suggested by the unsatisfactory nature of explanations for the blindness, taken in connection with the paper of Dr. H. B. Young (Jnl. A. M. A., Oct. 1, '98) upon amblyopia from auto-infection. The closest resemblance to these cases I ever met was in the wife of a medical friend, some years ago, ill with puerperal eclampsia and acute albuminuria. She became totally blind, without light perception, and remained so for three days. Pupils were dilated ad maximum. After this time she made complete recovery, and has remained well. The eyes have been normal since. There was no fundus lesion to account for loss of sight. The overeating, in which two of the patients indulged, lends, possibly, some weight to this view.

In conclusion, it seems that the similarity of onset and symptoms points to one and the same cause: that the lesion was an acute retrobulbar neuritis; that a *toxic* origin of this neuritis is most probable, though such a cause of ACUTE neuritis, with permanent atrophy, is not generally recognized. What this toxic agent was, it is impossible to say; but an alcoholic essence of Jamaica ginger, known in at least one case to be free from adulteration, is the most probable. Whether toxic effect was direct or indirect is also unknown. There are difficulties in the way of accepting alcohol as the toxic agent.

The following clipping is from the Baltimore *Sun* of November 16th. It shows that Jamaica ginger is recognized in "dry" places as harmful. I wrote recently to a physician in Oxford asking particulars, but have had no reply.

"There were two deaths in Oxford last week caused by drinking Jamaica ginger, used as a substitute for whiskey in dry places. The first to die was one Terry, a peripatetic individual, who spent most of his time in Oxford. It is said he has a wife and children, but their residence is unknown. John Cousins, a permanent resident of Oxford, was the other victim of this pernicious habit."

Also, in the Baltimore *Evening News* of December 13th there is copied from the Cambridge *Democrat and News* the announcement of seven deaths at a small town, Crisfield, from Jamaica ginger; also the statement that in Dorchester County, where Cambridge is situated, the Courts have included the sale and use of ginger as a beverage as contrary to the law, with the effects of "banishing this dangerous and deadly drink," and putting a stop "almost entirely to drunkenness and rowdyism." At Cambridge it may be possible to get information concerning eye disturbances, if they occurred. I shall inquire and report if I learn anything.

842 Park Avenue.

THE NOMENCLATURE OF THE OCULAR MOVEMENTS.

BY ALEXANDER DUANE, M.D.
NEW YORK.

There is still considerable confusion with regard to the precise meaning that should be attached to the terms used in describing the muscular states of the eyes. Thus, to take one instance, the term abduction is used to signify (*a*) the actual power of movement of either eye outward (in performing associated parallel movements); and (*b*) the amount by which the two eyes can be made to diverge from each other in overcoming prisms, held before them, base in. A similar confusion exists with regard to the term adduction, this being used to denote both convergence (as evidenced by the ability to overcome prisms, base out) and also the capacity displayed by one eye for moving inward when the other is moving outward.

Now confusion in nomenclature often means confusion of ideas. Consequently it leads to erroneous deductions. For example, one author argues that because abduction (in the second sense) is but a small fraction of adduction (in the sense of convergence), therefore the external recti are four or five times as weak as the interni. Again, the former erroneous designation of all cases of exophoria as "insufficiency of the interni" was founded upon by a similar confusion between adduction (in the sense of convergence) and adduction as denoting the inherent power of movement inward lodged in the interni.

In any case, it is better always to use terms that shall be free from ambiguity, and particularly to use different expressions for actions that are essentially distinct in nature. Our nomenclature, therefore, should be such as to clearly differentiate (1) the individual movements of each eye by itself, (2) the associated parallel movements of the two eyes together, and (3) the associated disjunctive movements of the two eyes—three functions which are presided, in all probability, over by a distinct class of nerve-centers, and which are, at all events, affected independently of each other by pathological processes.

The requisite distinctions can be expressed by means of terms that are for the most part already in use. All that is needed is for ophthalmologists generally to agree upon using these terms in a uniform way, attaching to each a single definite meaning, which every one would admit to be the only meaning of the word. The following plan is offered as a suggestion to this effect. It is based upon two principles: To use terms already current, wherever possible; and to do as little violence as can be to existing usage.

CLASSIFICATION OF OCULAR MOVEMENTS.

1. *Movements of Each Eye Separately.*—DUCTIONS.

a. ABDUCTION. Movement of either eye from the middle line toward the temple.

b. ADDUCTION. Movement of either eye from the middle line toward the nose.

c. SURSUMDUCTION.* Movement of either eye upward.

d. DEORSUMDUCTION.* Movement of either eye downward.

e. As less important, but still useful words (and words, too, that are in use) are LATERIDUCTION, movement of either eye laterally (either out or in); DEXTRODUCTION, movement of either eye to right; LÆVODUCTION, movement of either eye to left.

2. *Associated Parallel Movements of the Two Eyes.*—VERSIONS.

a. DEXTROVERSION. Movement of both eyes to the right.

b. LÆVOVERSION. Movement of both eyes to the left.

c. LATERIVERSION. Movement of both eyes to the same side (either right or left.)

d. SURSUMVERSION. Movement of both eyes up.

e. DEORSUMVERSION. Movement of both eyes down.

f. Compound terms expressive of movement of both eyes up and to right (SURSUM-DEXTROVERSION); up and to left (SURSUM-LÆVOVERSION); down and to right (DEORSUM-DEXTROVERSION), down and to left (DEORSUM-LÆVOVERSION).

3. *Associated Disjunctive Movements of the Two Eyes.*—VERGENCES.

a. DIVERGENCE. Separation of the two visual lines in a horizontal plane.

b. CONVERGENCE. Approximation of the two visual lines.

c. SURSUMVERGENCE.† Separation of the two visual lines in a vertical plane. Called right or left according as the right or left visual line stands higher.

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*Maddox, who has done so much for the systematic studies of muscular anomalies, proposes *superduction* and *subduction*. These are shorter, but are less correct etymologically speaking. *Sub* means not only " beneath," but also "from below," and *subducere*, in particular, means "to draw up" as well as "to draw down." So also *superducere* means "to draw upon" (or "over") rather than "to draw up."

†Formerly called *sursumduction*,

4. *Movements of Rotation of the Vertical Meridian of the Cornea.* TORSIONS.*

a. INTORSION.† Rotation of the vertical meridian so that the upper end points inward.

b. EXTORSION.† Rotation of the vertical meridian so that its upper end points outward.

c. DISTORSION. Divergence of the upper ends of the two vertical meridians.

d. CONTORSION. Convergence of the upper ends of the two vertical meridians.

e. LATERITORSION, rotation of both vertical meridians to one side, *i. e.*, either to the right (DEXTROTORSION) or to the left (LÆVOTORSION).‡

Corresponding to these nouns denoting actions, would be naturally formed a series of derived nouns denoting the muscles performing the actions; for example, *abductor*, *dextroverter* (muscle turning eye to right), *intortor* (muscle rotating vertical meridian inward), etc.; and a series of verbs, such as *abduct*, *converge*, *sursumvert* (=to turn both eyes up), *intort* (Maddox), *extort* (Maddox), etc.

Some sentences illustrating the use of these terms and showing their convenience are appended:

The functions of the superior oblique are *deorsumduction*, *abduction* and *intorsion*.

Cerebral hemorrhage may produce spasm or paralysis of *lateriversion* (either of *dextroversion* or *lævoversion*) and occasionally of *sursumversion* and *deorsumversion*. In rare cases we may also have paralysis of *convergence* or of *divergence*, while the *abduction* and *adduction* are unimpaired.

In paralysis of the superior rectus we have *extorsion* of the paralyzed eye, while the sound eye remains *untorted*. These cases, therefore, are marked by *distorsion*.

In looking up and to the right (*sursum-dextroversion*) the right eye is *extorted*, the left *intorted*, and to an equal degree; *i. e.*, there is a state of *dextrotorsion*.

The *dextroverters* are the right externus and the left internus.

Whatever may be thought of the propriety of the special terms here advocated, the convenience of having some terms of the sort to use in place of a long periphrase, and the advantage of having such terms used by all ophthalmologists with the same meaning must be obvious to anyone who either writes or reads much about the eye-muscles and their anomalies.

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* In spite of theoretical objections against this term, its increasing use and the fact that there is no other equally serviceable expression available are strong arguments in its favor. The "wheel-rotation" (Raddrehung) and "rolling" (Rollung) of the Germans are neither as convenient nor actually as expressive as "torsion," which, moreover, admits of the formation of convenient compounds and derivatives.

† Maddox.

‡ It would doubtless be convenient to have some term other than torsion to denote associated parallel rotation-movements of the two vertical meridians; the term "torsion" being reserved for rotation movements taking place in either eye separately. Compare above "ductions" and "versions." But to do this would needlessly enlarge the terminology already pretty extensive.

TWO CASES, WITH OCULAR SYMPTOMS OF HYSTERIA, AND THEIR TREATMENT.

BY J. WALTER PARK, M.D.
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I read with a great deal of interest an article by Dr. Casey A. Wood, of Chicago, "on the methods employed in examining the eyes for the detection of hysteria," in the *Journal of the American Medical Association*, of November 12th, 1898, and at once decided to report two very interesting cases of hysteria, with ocular symptoms, which seemed to confirm my diagnosis after treating them successfully, and also confirm some of Dr. Wood's symptoms, which he says predominate in such cases. One was a case of hysterical hyperæsthesia of the retina, combined with neurasthenia, and the other, a case of hysterical amblyopia. I can best give the treatment of these cases by relating their history and management while they were under my care. Mrs. G——, aged 36, sent for me on May 11th, 1898, to come to see her at her residence, stating that she was afraid she would become blind, and that she was in great mental distress. On account of her neurasthenic condition, as well as the great anxiety of mind, superinduced by the thoughts of perhaps becoming blind, seemed to prostrate her apparently beyond recovery. Upon entering her bedroom, which was very dark, I noticed that even the window-blinds were closed, so that not a ray of light could enter the room. I asked for a light to examine my patient, which was forbidden me, but after assuring her that it would not make her eyes any worse, she finally consented. I found my patient sitting in bed with a pair of dark glasses on, in a very dark room, and her eyes closed as tight as she could close them. There seemed to be considerable spasm of the orbicularis muscle of both eyelids. She was in a state of perspiration, emaciated, pulse 120, and very despondent. She has had nervous dyspepsia for several years, and has been under a physician's care constantly. It was with great difficulty that I could get her eyes open far enough to even get a glance at her corneas. The photophobia seemed almost beyond endurance. I decided to follow the suggestive plan of treatment. I first asked her whether she thought that I could do her any good. She said yes, she thought I could, or else she would not have sent for me. I then talked to her awhile and explained how other cases similar to hers had recovered entirely, and after I seemingly had gained her confidence in what I could do, said to her: Do you know, Mrs. G——, that you can open your eyes, and keep them open? You can open the window blinds, the windows, and your eyes will not even pain you. I can look into your eyes with my ophthalmoscope and your eyes will not close suddenly as they formerly did. I commanded her to open her eyes; she did so, and kept them open with all the light in the room I could get in. I examined her ophthalmoscopically, but could find nothing pathological.

She did have some hyperasthesia of the retina, but this soon all passed away, after keeping her eyes open and exposed to the light. My ophthalmoscope and retinoscopy mirror showed some error of refraction, which I afterward corrected. I told her to keep the windows open, and have the room well ventilated, to get up out of bed and sit in a chair, and in a day or two she could go downstairs to her meals. Before I left her, her pulse was less frequent, she seemed cheerful, and seemed amazed at the miracle I had wrought. She was put on a restricted diet for her nervous dyspepsia, and advised to get out as soon as possible into the open air. She soon gained strength, and in three weeks came to my office. She had slight orbicular spasm, a fair appetite, and had gained considerably in weight. I dilated her pupils with homatropine, and found the following error of refraction :

$$\text{R. V.} = \tfrac{15}{40} \text{ sph.} + 0.75 \frown \text{ cyl.} + 0.25 \text{ Ax. } 180 = \tfrac{15}{15}.$$
$$\text{L. V.} = \tfrac{15}{70} \text{ sph.} + 1.25 = \tfrac{15}{15}.$$

Previous to the correction of her refraction, she said she could not read without her eyes burning, blurring of type, headache, etc. There seemed to be a great deal of spasm of her accommodation and monocular and binocular diplopia. This was all remedied by the correction of her error of refraction. I did not take her field of vision, and am therefore unable to say how her field of vision was for colors. Macropsia and micropsia were occasional symptoms. She came to see me November 12th, 1898, feeling very well, having gained very materially in weight since her illness last May. The element of fear in some cases of hysteria is so great that it requires careful consideration as to how you can best eliminate it. This case seemed to me to be one in which a firm and decided suggestive plan of treatment at first would do an immense amount of good, followed by the correction of her errors of refraction, and the treatment of her general health, and plenty of outdoor exercise. Each case is a study of itself as to the best method of making a mental impression upon your patient. It is very essential to first gain the confidence of your patient. I have them discard dark glasses entirely if possible, and it is remarkable how soon they will be able to go without them. It is needless for me to say that the complication of neurasthenia is generally found in all hysterical cases, and the out-door life, massage, electricity and general tonic treatment advised in such cases does them a great deal of good.

The second case was one of hysterical amblyopia, occurring in a young lady, aged 17. She consulted me October 14, 1893. Her history is the following: On October 12th, 1893, she became suddenly blind (as she described it), in both eyes, but later in the day partially regained her vision in the L. E. The day she consulted me her vision in R. E. equaled counting of fingers only at two feet, and in L. E. $\frac{15}{70}$. I examined her carefully with the ophthalmoscope, but could find nothing pathological in either eye. She had a great deal of spasm of accommodation, also of the orbicularis, and occasional attacks of monocular and binocular diplopia, which made me suspicious of hysteria. I then tried to frighten her by telling her I was afraid she would get entirely blind, and said: Why, you cannot see anything now, when she seemed to become quite indignant, and said she could see, and that she was not blind. I put the trial frame on her face, and she read with each eye separately, $\frac{}{20}$. I then told her she could see quite well with each eye, which she at first did not want to believe, but I soon convinced her fully of that fact. Under homatropine she showed the following error of refraction:

R. sph. $+0.25 \overset{\frown}{\smile}$ cyl. $+0.75$ Ax. $90^\circ = \frac{15}{15}$.
L. sph. $+0.25 \overset{\frown}{\smile}$ cyl. $+1.$ Ax. $90^\circ = \frac{15}{15}$.

She was very nervous and prostrated, caused by the fear of perhaps being permanently blind. I gave her a tonic in pill form, of iron, quinine and zinc val. In a few weeks she seemed quite well, and has remained so ever since. I discovered in this case, while getting her history, that she was inclined to disbelieve what physicians told her whenever she consulted any professionally, and accordingly I thought she would soon deny that she could not see, when I told her so, but would say the contrary as to what I told her, which she did immediately, thereby enabling me to confirm my opinion in the case. I had to tie her left eye shut to convince her she could see with her R. E., or as she called it, her blind eye. My conclusions as regards the management and treatment of such cases are:

1st. Each case should be examined thoroughly and studied well, so as to be sure you have an hysterical case to deal with.

2d. Every case should be studied well as to the best method of making a mental impression upon your patient, whatever that may be.

3d. A suggestive plan of treatment, taking a firm and decided stand in whatever you command them to do, seems the best method in the majority of cases, always remembering that the element of fear enters largely in all hysterical cases, and must be removed to be successful with your case.

4th. All errors of refraction and muscular insufficiencies should be corrected.

5th. In all neurasthenic cases, an out-door life, massage, electricity and general tonic treatment, seems very necessary.

6th. In most cases you get good results, if you can gain the confidence of your patient, and treat them upon the above-mentioned principles.

32 North 2d Street.

A SIMPLE DEVICE FOR COMBINED EXAMINATION OF THE ANTERIOR PORTION OF THE EYEBALL AND RETINOSCOPY.

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PHILADELPHIA.

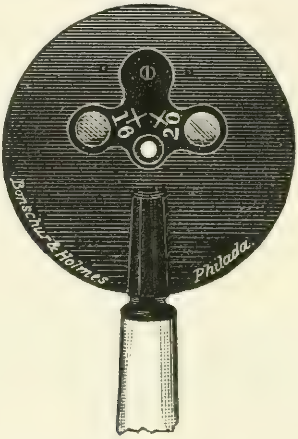
Illustrated.

To overcome the inconvenience of wheeling a high-power convex lens before the sight-hole of an ordinary ophthalmoscope (which procedure is especially annoying and time-consuming in the Loring, Morton and Gould instruments), I have suggested the following simple device, which has been very satisfactorily manufactured by Messrs. Bonschur & Holmes of Philadelphia. There is nothing particularly original in the adaptation, but it has proved sufficiently useful to me to warrant its public description.

To the back of the case of an ordinary concave retinoscopic mirror is affixed a light, swinging frame containing three apertures and stopped in position on either side by two pins. The central aperture is left open and the other two are occupied by a +S. 16 D. and a +S. 20 D. lens respectively. The sight-hole in the mirror is not cut through the glass, but is simply scraped through the mercurial back of the mirror.

With the central aperture in position, the instrument constitutes an ordinary retinoscope or concave mirror for use in all its indications. By swinging the +S. 20. D. lens before the sight-hole, the cornea may be satisfactorily examined. The +S. 16 D. lens may be used for examination of the posterior portion of the anterior chamber and the anterior part of the lens.

If desired, an additional lens of 7 to 10 dioptres strength may be inserted in the central aperture for examining vitreous opacities. In fact, the arrangement of the three swinging apertures may be left entirely to the choice of the operator. If he is ametropic, his correction may be inserted in the central aperture. A plane mirror, for retinoscopy at short range, may be fitted in the same manner. A Presbyope may have his exact correction for one meter inserted in the central aperture.



The illustration represents the attachment on the back of a retinoscope with the central aperture in position.

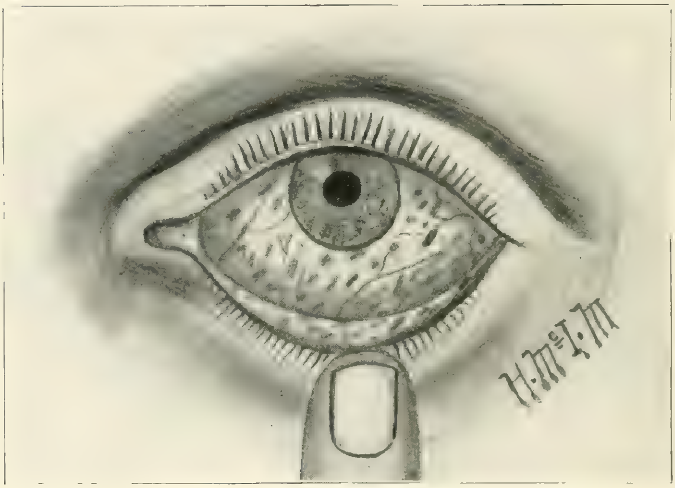
FOREIGN BODY IN LENS THIRTY-TWO YEARS.

H. P. NOTTAGE, M.D., PROVIDENCE, R. I.

C. S. came to me to have his eyes examined for glasses. I discovered what appeared to be a piece of steel in the lower nasal quadrant of the right lens. The point like the point of a needle was barely visible above the undilated pupil.

After dilatation with cocaine it was seen that the object in question was about one-sixth of the diameter of the lens in length.

Around it, limited to the lower nasal quadrant, only, was a light cloud


H·McI·M

of opacity in the shape of a crescent and parallel to the circumference of the lens. This was not visible in the undilated pupil.

The vision was:

$$\frac{6}{36}\text{: with} + 1.75 = \frac{6}{18}$$

The patient stated that in 1866 he was struck by a piece of iron. He went immediately to the infirmary at Manchester and had it "removed" at once by a swab. He went back to his work, as a machinist, and experienced no further trouble. He has never had any pain or discomfort whatever. The piece of metal lies against the posterior capsule and shows clearly by front or side illumination.

PUNCTATE HEMORRHAGE INTO THE BULBAR AND PALPEBRAL CONJUNCTIVA FOLLOWING THE ADMINISTRATION OF NITROUS OXIDE GAS.

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Illustrated.

Miss M. K., white, aet 23. Patient of robust constitution and present state of general health perfect.

On this day (May 20th, 1897) she had taken nitrous oxide gas, preliminary to the removal of a tooth. The anæsthetic was borne without any unusual effect noticeable at the time. Upon her arrival home she experienced an itching of her left breast and neck, and noticed that the skin was markedly red. She consulted her family physician, who, observing the punctate hemorrhage of the bulbar conjunctiva as well as upon the left neck and breast, referred her to my office. The appearance was as is shown in the cut (Fig. 1), the bulbar and palpebral conjunctiva being dotted with small hemorrhages.

The right eye was affected, but only by a few hemorrhages, and the right neck and breast very slightly indeed. The fundi presented a normal appearance and the eye and their adnexa—with this exception—were in good condition. The hemorrhages were gradually absorbed, and the eye presented a normal appearance in a few weeks.

The hemorrhages probably resulted from increased capillary pressure and alterations in the blood as well, due to the nitrous oxide gas.

315 New York Life Bldg.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, FEBRUARY, 1899. NO. 2. NEW SERIES

EDITORIALS.

CONCERNING CERTAIN CONJUNCTIVAL AND CORNEAL DISEASES FROM THE BACTERIOLOGICAL STANDPOINT.

Although the study of the relationship of bacteria to certain conjunctival and corneal diseases has not yet advanced sufficiently to justify the omission of clinical designations, none the less, largely owing to the labors of Gifford and Weeks in this country and to those of Uhthoff, Axenfeld, Morax, Beach, Coppez, Bach and many others abroad, we may speak of Koch-Weeks'-bacillus-conjunctivitis, pneumococcus-conjunctivitis, Loeffler-bacillus-conjunctivitis, streptococcus-diphtheria of the conjunctiva, diplobacillus-conjunctivitis, pneumococcus-ulcer of the cornea, streptococcus-ulcer of the cornea, etc., and (with certain limitations and exceptions) mean the diseases usually labelled acute epidemic or contagious conjunctivitis, acute catarrhal conjunctivitis, membranous conjunctivitis, sub-acute or chronic conjunctivitis, serpiginous ulcer of the cornea, etc.

Among the limitations and exceptions may be mentioned, for example, our inability to anticipate with certainty which bacterium will be found in the secretion of two cases of acute conjunctivitis, presenting in general terms the character of "contagious" or "epidemic," the Weeks'-bacillus or the pneumococcus; or, in other words, the clinical distinction between Koch-Weeks'-bacillus-conjunctivitis and certain types of pneumococcus-conjunctivitis is at times difficult, if not impossible. Again the same bacterium may vary in its effect on the conjunctiva; for instance, the Loeffler-bacillus may produce in one eye a destructive (necrotic) diphtheria of the conjunctiva, in another a non-destructive (non-necrotic) inflammation, and in a third a conjunctivitis in all particulars resembling the ordinary catarrhal variety of this disease. Although the large majority of serpent ulcers (hypopyon-keratitis) appear to be due to pneumococcus-infection, the pneumococcus does not always produce a serpiginous ulcer, which may be due also to streptococci or to mixed infection; more rarely to other bacteria or to a fungus, the aspergillus fumigatus.

The exact reasons for these phenomena are not entirely clear; evidently they are connected with varying degrees of virulency of the microorganisms, local conditions in the soil, that is in the conjunctiva or cornea, on which the bacterium falls, and individual susceptibility. Thus, pneumococcus-conjunctivitis, especially of mild type, is common in children and was once supposed to be peculiar to them, but the pneumococcus-ulcer in the sense of a true serpiginous ulcer of the cornea is a great rarity in them. Again, as the writer knows from numerous experiments which agree with the experiences of others, it is practically impossible to produce a real pneumococcus-(serpiginous) ulcer of the cornea in rabbits, although their conjunctivæ are quite susceptible to pneumococcal infection. Perhaps these exceptions and limitations will in part disappear when we learn to be more accurate in associating certain clinical signs with certain types of infection. Thus, in spite of the fact that many cases of pneumococcus-conjunctivitis and Koch-Weeks'-bacillus-conjunctivitis appear to be very similar, it is probable that typical examples of each class may be differentiated by a clinical study of the secretion (Gasperini), and, at all events, the contention of Weeks that acute contagious conjunctivitis (Weeks-bacillus-conjunctivitis) should be regarded not as a variety of acute conjunctivitis, but as a separate disease, is reasonable. So, too, the objective symptoms of purulent ulcers of the cornea are interesting in connection with their bacteriological contents. For example, the true pneumococcus-ulcer, that is the typical serpiginous ulcer, is, as the name implies, a creeping lesion, at first advancing by means of an undermined arc of propagation, while the streptococcus-ulcer is more apt to cause rapid destruction of the corneal tissue in its immediate neighborhood and early perforation.

Recently the writer and Dr. C. A. Veasey presented to the Ophthalmic Section of the College of Physicians of Philadelphia the results of a number of bacteriological examinations of the discharge from cases of conjunctivitis and corneal ulcers and some experiments on rabbits' eyes. In general terms their findings corresponded with those of other observers, viz: in acute conjunctivitis having the general characteristics of the contagious type, the Koch-Weeks'-bacillus or the pneumococcus; in mild catarrhal conjunctivitis staphylococci; in purulent conjunctivitis usually gonococci; in membranous conjunctivitis (non-recurring forms) Klebs-Loeffler-bacilli or streptococci; in subacute conjunctivitis diplobacilli, and in some cases streptococci; and in sloughing corneal ulcers either streptococci or pneumococci. They urged the importance of these examinations not only because they are aids in diagnosis and prognosis, but also because to a certain extent they influence therapeusis.

Thus, in a certain number of cases of membranous conjunctivitis, especially those which have followed a febrile manifestation like measles, the active organism may be the streptococcus and not the Loeffler-bacillus, and, as has been pointed out by Morax and others, this form of conjunctivitis, sometimes known as "streptococcus-diphtheria of the conjunctiva," furnishes a very unfavorable prognosis. In membranous conjunctivitis, due to the Loeffler-bacillus, the corneal involvement may be entirely out of proportion to the conjunctival lesion, as has been admirably demonstrated by Myles Standish, and, as Weeks has shown, cases of membranous conjunctivitis are often clinically very similar, there being no good means of differentiating them except by bacteriological examination. The importance of these observations may be realized when we remember that in true Loeffler-bacillus-conjunctivitis (diphtheritic conjunctivitis) antitoxin is the remedy par excellence; but it is apparently of indifferent value in the membranous conjunctivitis due to streptococci, which, according to some observations made by Veasey, seems to yield better to a collyrium of chlorate of potassium than to other local remedies. The facility with which subacute conjunctivitis, due to diplobacilli, is cured by sulphate of zinc is well known, thanks to the observations by Gifford, Morax and others. If the scrapings of a corneal ulcer show pneumococci or streptococci, that ulcer is liable to spread and vigorous measures should be used to check it, and there is no difficulty with fluorescine, or, as pointed out by Veasey, with toluidin-blue, in outlining exactly the area which should be destroyed. To be sure, most of us now treat ulcers by the application of an antiseptic or bactericidal agent, for example, nitrate of silver, tincture of iodine, formol solution, etc., but as Ward Holden suggests, if there is pneumococcus-infection and the colonies are deep, these substances probably do not suffice; therefore, the value of a smear preparation of a scraped ulcer in helping to determine early therapeutic measures in corneal lesions.

It is almost needless in this day to urge the examination of abnormal conjunctival secretion, either in new-born children or in adults, for the purpose of determining the presence or absence of gonococci. But both Dr. A. B. Kibbe and Dr. Herman Knapp have thought it worth while, in the Archives of Ophthalmology, to make a plea for the more general use of the microscope in ophthalmic diagnosis, and have furnished illustrative cases. To these the following instances may be added: A female child, the mother a primipara and the labor very rapid, developed at the end of the third day slight conjunctivitis in one eye, which on the following day had reached the second. The obstetrician in charge directed a strong solution of bichloride of mercury (1-3000) and dropped into the eye a solution of nitrate of silver, 10 grains to the ounce. The eyes became rapidly worse, and about the fourth day after the appearance of the inflammation the writer saw the case. Repeated bacteriological examinations failed to reveal gonococci. All harsh treatment was immediately discontinued, and with a collyrium of boric acid and salt, cold compresses for forty-eight hours, and a little liquid vaseline introduced into the conjunctival cul-de-sac, the cure was rapid and complete. Now this was a conjunctivitis neonatorum in the sense that it occurred in a new-born child, but by no means of specific origin. It is probable that the source of the irritation in this case which produced the conjunctivitis came from the vaginal mucous membrane, which for a day or two preceding birth had been somewhat irritated, it was supposed in connection with a sharp attack of influenza. Indeed, the birth itself took place twenty-four hours in advance of calculations.

Again, a man about forty appeared with acute conjunctivitis, which developed first in the right eye and a few hours later in the left. The lids were swollen, the conjunctiva slightly chemotic and there was a free secretion of mucopurulent discharge. The patient at the same time had gleet. His trepidation can be imagined, but repeated examinations of the conjunctival discharge failed to reveal gonococci. In other words, a patient suffering from gleet had acquired an acute contagious conjunctivitis of that variety produced by the Koch-Weeks'-bacillus, which at that time was epidemic in the region, and the microscope made the differential diagnosis, which from clinical symptoms alone would have been difficult, especially in view of the fact that the patient was richly entitled to a gonococcal infection. To quote Dr. Knapp, these examinations take but little time, they are an element of assurance in diagnosis, prognosis and treatment, and should not be omitted in any case implying the least responsibility.

G. E. DE SCHWEINITZ.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

Clinical Evening, Dec. 8, 1898.

The meeting was entirely given up to the showing of cases and to the discussion of them.

Mr. Nettleship showed and read the notes of the first case which was one of renal retinitis, of which he had had the opportunity of examining the eyes both before and after death; he was also able to show drawings of the microscopical character of the retina. He considers that the patches seen are due to effusion, which, when it clears up to a certain extent, numerous pigment cells are found which are derived from the pigment cells of the retina by proliferation. Lawford, who examined the specimen, found that the exudation was in the rod and cone layer, and was outside the membrana limitans externa, and being outside the vessels could not be due to hemorrhage.

Mr. Holmes Spicer showed a case of sympathetic ophthalmia, coming on after excision of the eyeball after a wound with a sardine box. A week after the injury the patient was seen and a tag of iris was removed; this was followed by much hemorrhage. Two weeks after the injury the eye was excised without being wounded during the operation. Fourteen days later the eye became infected and the vision became diminished. The patient was readmitted, although there were no signs of either K. P. or of iritis T-2 V $\frac{6}{36}$. He was treated with compresses, atropine and mercury, and although there was much exudation into the vitreous, yet the vision rapidly improved to $\frac{6}{9}$.

Mr. Adams Frost had seen a case of sympathetic ophthalmia occurring after Mules' operation, but this case also recovered.

Mr. Marcus Gunn thought that in these cases a ragged wound was nearly always the cause of the mischief.

Mr. W. J. Cant (Lincoln) showed a case of pulsating exophthalmos occurring after a kick in the head by a horse eight years before. The symptoms were diplopia and a tumor at the outer angle of the orbit, causing great proptosis and over which a loud bruit could be heard. The treatment consisted of digital compression on the carotid, which was continued for nine weeks for three and a half hours a day. The tumor has disappeared and there is now only slight proptosis remaining. In reply to a question from Mr. Arnold Lawson, Mr. Cant said that the pain caused by the treatment was not great; no opium was used and a great deal of the digital compression was done by the patient himself.

Mr. John Griffin and Dr. Blair showed a case of an unusual form of marginal keratitis, probably a variety of pemphigus. It has a great tendency to run in families and a peculiar kind of eczema is present on the body. The eye condition at times resembles spring catarrh and at times phlyctenular keratitis. The general condition is treated by arsenic and tonics while the eye condition is very intractable.

Mr. Doyne stated that he had shown a case similar to this one, or rather worse, ten years ago. It remained in the same condition for a very long time.

Mr. A. H. Thompson showed a case of tumor of the iris in a patient suffering from tobacco amblyopia. The growth was situated on the lower and outer part of the iris; the superficial area was 3 by 4 mm., the surface was rough and there was some ectropion of the uvea. The growth was probably a sarcoma.

Mr. Hartridge showed a case of early choroiditis, showing great exudation and hemorrhages in both eyes; the condition was remarkably symmetrical in the two eyes. The patient's age was 23. The personal and family history was good and there was no history of syphilis. Both discs were swollen, and there was a large choroidal hemorrhage on the outer side of each, with oedema of the whole central region of the retina, with several small circular patches of exudation in the superficial layers of the choroid.

Mr. Ernest Clarke showed a man aged 53, whose sight had been failing for five years. He had had syphilis and had been a heavy drinker. He had, when seen four years ago, double optic neuritis, and the vision was reduced to fingers at 1 metre. During the last four years optic atrophy had supervened together with atrophy of the epithelial pigment, and of the chorio-capillaris and sclerosis of many of the choroidal vessels, the periphery of the retina showed pigmentation like that of retinitis pigmentosa. There were large vitreous opacities. The vision was reduced to P. L.

Mr. Juler showed a case of myxo-sarcoma of the orbit which contained cysts. The contents of the orbit were removed and the roof of the orbit was eroded and the dura mater exposed. A recurrence has since taken place. The nature of the tumor was ascertained by microscopic examination.

Dr. Tatham Thompson showed a man aged 18 who had vision of $\frac{20}{200}$. The white sclera was seen all over the fundus, there being no choroid except at the macula. There were only a few isolated choroidal vessels.

Mr. W. H. Jessop showed a case of injury to the cornea. A large flap which was turned down from the upper part had become united in excellent position.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT PHYSICIANS.

Meeting of December 15th, 1898.

A very interesting case of gumma of the conjunctiva was presented by Dr. A. Barkan.

The patient, a woman of about 25 years, has a large gumma over the right tibia, and numerous large indurated ulcerative skin lesions resembling tuberculo-syphilitic sores. The ocular trouble began three months ago in the right eye, in which there is superficial infiltration of the cornea, and iritis. At the inner edge of the pupil there is thickening and evidence of the remains of gummæ. In the left eye is the same corneal infiltration and also iritis. The bulbar conjunctiva over its lower half is much swollen and oedematous, and at the apex of the swelling, and nearly directly over the limbus, is a large, semi-transparent gumma. Dr. Barkan stated that at first he thought he had to do with congenital lues, as there is no history of acquired syphilis, but of course, the existence of the latter is to be presumed. He had placed the patient upon potass. iodid in 20 grain doses. The gumma appeared to be taking on an ulcerative process rather than resolution. His experience inclined him to believe that there is no advantage to be derived from larger doses of the iodid.

In the discussion, Dr. W. A. Martin mentioned that he had seen several cases of gumma of the sclero-corneal margin in the clinics of Europe, and thought that in Dr. Barkan's case, the gumma probably sprang from that region and from the episcleral tissue.

Dr. Frederick had seen a case similar to those described by Dr. Martin, at Moorfields, the cornea itself being implicated.

Drs. L. C. Deane and Philip M. Jones had seen cases of ocular and other syphilitic conditions in which the 20 grain doses of iodid had no effect, but which had recovered under doses of from 60 to 120 grains.

Dr. Geo. H. Powers presented one of the patients he had exhibited at the last meeting, and who had at that time proptosis and impaired movement of the globe. As possibly explaining the conditions, he called attention to the man's right thumb, the nail of which is absent and replaced by an extensive scar. Twenty years previously there had been a sore at that point, which a competent practitioner in Scotland had pronounced to be a chancre.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting December 20, 1898. Dr. George C. Harlan, chairman, in the chair.

Dr. Charles A. Oliver detailed the history of a case of unequivocal *Reflex Urticaria Caused by Eye-strain.* The patient was a healthy, active woman, 47 years of age, who up to her forty-first year had constantly suffered from a diffuse, unaccountable nettle-rash. Six years before she was seen by Dr. Oliver, her physician found that a pair of complicated, sphero-cylindrical bifocal lenses for constant use promptly, and without any suggestion or change in manner of life, prevented the urticarial attacks. A return of the eruption, with visual disturbance, induced her four years later to seek a new cylindrical correction. Antimetropia, heterophoria, astigmatism, and presbyopia being corrected at this time, the cnidosic symptoms passed off, and have remained in abeyance ever since. Subjective and objective experiments of both motor and sensory type were made, both positively and negatively and locally and generally, until it was proven that a true relationship existed between the general vasomotor disturbance and the refractive and muscular anomalies.

Dr. John T. Carpenter, Jr., described a case of *Multiple Rupture at the Posterior Pole, with Associated Traumatic Lesions in the Iris and Lens*, in a boy of 15, the subject of convergent strabismus. Three years before, the right, the fixing eye, was struck by a potato thrown from a distance of fifty feet. The left eye was practically useless from high amblyopia and excessive convergence, and during the interval between the receipt of the injury to the other eye and the present, vision had remained equal to 1/60. In the right he had immediate loss of central vision, partially recovered to 6/24; pupil horizontally oval and widely dilated; paralysis of the sphincter of the upper half of the iris and trembling of the entire membrane; numerous "droplets" distributed in the anterior part of the lens-cortex and a linear opacity, vitreous shreds; papilla partly concealed by exudation; and finally three large tears in the choroid in the lower temporal and macular regions, partially including the nerve-head. Central vision was impossible. Dr. Carpenter called attention to the following points of interest: The associated lesions of the iris, lens, and fundus; the lack of improvement in vision of the amblyopic eye in three years; the number and character of the fundus lesions.

Discussion.—Dr. C. A. Oliver referred to several similar cases of his own and of Mr. Jonathan Hutchinson. In one of the former a man was struck in the eye by a fist. The iris was ruptured, the sphincter split, the lens totally dislocated into the floor of the vitreous chamber, the choroid infiltrated with hemorrhages, the entire fundus hazy, and the disk atrophied.

Dr. H. F. Hansell explained the apparently contradictory history of Dr. Carpenter's case to that reported by Johnson, in which vision in the amblyopic eye had improved to the normal acuity after loss of the fixing eye, by noting that vision of the wounded eye was, in spite of the accident, better than the vision of the amblyopic eye; hence the latter was not used for fixation and the amblyopia remained without change.

Drs. G. E. de Schweinitz and C. A. Veasey presented the results of the *Bacteriological Examination of Forty-six Cases of Conjunctivitis and Corneal Ulcer.* In general terms, in the mild types of conjunctivitis staphylococci were usually found; in the acute varieties, which were usually classified as contagious or epidemic, the pneumococci and the Koch-Weeks bacillus; in the membranous varieties either streptococci or Löffler's bacillus; and in the subacute forms of conjunctivitis, in one case at least, the diplo-bacillus of Morax and Axenfeld. In some cases unidentified bacteria were discovered, and in others the examinations were negative.

In the corneal ulcers of the superficial variety staphylococci and, in one instance, pneumococci were found; in the deep or sloughing ulcers without hypopyon, either streptococci or pneumococci; and in those with hypopyon, in one case a mixed infection (pneumococci and streptococci) and in the other a pure streptococcus infection.

Dr. de Schweinitz also described inoculation experiments on rabbits' eyes with pneumococcus cultures, in which he had failed to produce a typical serpent ulcer. Streptococcus injections and staphylococcus injections also failed to produce typical serpiginous ulcer.

The authors pointed out the value of bacteriological examinations, and gave illustrative cases where these examinations had influenced diagnosis, prognosis, and particularly therapeusis. While they realized the importance of bacteriological examination in all cases, they did not think our knowledge was sufficiently great as yet to make a bacteriological classification of the various types of conjunctivitis and ulcerative forms of keratitis to the exclusion of the clinical classification.

In the treatment of the membranous form, streptococcus conjunctivitis, Dr. Veasey relied principally upon frequent copious instillations of chlorate of potassium, gr. x–℥j, as suggested by Knapp. He was successful in removing the membrane with this remedy after unavailing use of mercury bichlorid., boric acid, formaldehyde, zinc, and other remedies, and considered its bactericidal action better than that of zinc solutions for this variety of conjunctivitis.

Dr. William M. Sweet read a paper on the *Diplo-bacillus of Chronic Catarrhal Conjunctivitis*, and reported the examination of 32 cases of conjunctival and suppurative corneal disease, in 7 of which the germ was found. Six of the patients had low-grade chronic conjunctival congestion, with moderate secretion, and 2 had corneal ulceration. In one case of phlyctenular conjunctivitis a few specimens of the germ were found. The life history of the organism agreed with the studies of its discoverers, Morax and Axenfeld, and with the investigations of Peters and Gifford, while the resistance of the disease to ordinary forms of treatment, and its prompt subsidence under solutions of zinc, were fully verified. In one case silver, tannin, boroglyceride, and boric acid were used as treatment for a period of five weeks, with no abatement of the symptoms. As to the germ having a distinct capsule, Dr. Sweet was disposed to agree with the findings of Gifford, although Morax, Axenfeld and Peters state that no capsule exists.

Discussion.—Dr. de Schweinitz was inclined to believe in the existence of a bacillus capsule, although he admitted that it did not stain, and was difficult of demonstration. Dr. Oliver explained the exemption of some individuals and the selection of others on the basis of the difference in the character of the conjunctival sac and its secretions, as a soil adapted to the development in some, and the death in others, of the bacilli.

Dr. W. C. Posey reported his experience with *De Wecker's Capsular Advancement Operation.* He has performed it in 33 cases, comprising exotropias of low degree and exophorias of high degree. The immediate gain was 50 degrees in many instances, but when measured two years later it was found that only 6 degrees of gain remained. Although the operation would seem, therefore, objectively to be of little advantage, subjectively, on the other hand, the results showed that the operation was justified, as the symptoms produced by the weakness of convergence were always ameliorated. The author found that the operation was without danger, as he had only slight reaction following its employment, nor had he noticed any disfigurement to the eye therefrom, as the fold in the bulbar conjunctiva produced by the operation almost entirely disappeared at the end of a year.

Dr. Charles A. Oliver exhibited an apparatus designed to facilitate the use of Reid's ophthalmometer, which he claims furnishes distinct aid in accurately measuring the axis and degree of corneal astigmatism. The instrument is permanently held in an upright, adjustable contrivance of excellent workmanship and ingenious pattern.

HOWARD F. HANSELL,
Clerk of Section.

WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION.

The fourth annual meeting of the Western Opthalmologic and Oto-Laryngologic Association will be held at New Orleans, February 10th and 11th, 1899, these dates having been selected in order to give the visiting members an opportunity to see New Orleans during the celebrated Mardi Gras Carnival, which takes place February 13 and 14.

Arrangements have been made with the Illinois Central Railroad to transport members of the above association from Chicago to New Orleans and return, going via Memphis and Jackson, Miss., returning via Baton Rouge and Vicksburg to Memphis, making a diverse route from that point. This will be appreciated by visitors to the south, as it enables them to pass many historic points en route south, and the unsurpassed sugar and rice producing district between New Orleans and Baton Rouge, in addition to Vicksburg and other war-famed spots, north bound.

Leaving Chicago at 5.45 p.m., Wednesday, February 8th, Carbondale is reached at about midnight, where members from St. Louis can join, arriving in Memphis in the early morning, where those from Louisville, Cincinnati and the east will arrive at practically the same time, bringing members from many states together while yet nearly 400 miles from the Crescent City, which is reached at 7:45 p.m., only twenty-six hours from Chicago.

An interesting programme has been prepared and a full attendance is expected. The opening address will be delivered by Dr. George T. Stevens, of New York, "Historical Notes Relating to Strabismus and

Other Anomalies of Eye Muscles." The subjects chosen for discussion are: "Treatment of Acute and Chronic Glaucoma," by Drs. Dudley S. Reynolds, Louisville, Ky., John F. Fulton, St. Paul, Minn., and Charles W. Kollock, Charleston, S.C.; "Operative Treatment of High Myopia," by Drs. H. V. Würdemann, Milwaukee, Casey A. Wood, Chicago, and B. E. Fryer, Kansas City.

The officers of the association are: Dr. J. E. Colburn, Chicago, president; Dr. W. Scheppegrell, New Orleans, first vice-president; Dr. Casey A. Wood, Chicago, second vice-president; Dr. H. Gifford, Omaha, third vice-president; Dr. Thos. A. Woodruff, Chicago, secretary; Dr. W. L. Dayton, Lincoln, Neb., treasurer.

A PHYSICIAN in Germany has made a study of the effect of glazed papers on the eye-sight, as compared with the paper mostly used in the earlier part of the century—of dull gray or blue color, usually, and coarse-grained, so that thick letters had to be used by writers with quill pens or by printers on their slow presses. With the introduction, however, of other fibers in place of rags, paper received a smoother surface, steel pens could be employed and printing paper could travel over quicker printing presses. The introduction of brilliant colors has involved a brightness of reflection contrasting greatly with the mild and soothing impression of former days; in fact, the highly glazed surface now in vogue, and the variety of lights and shades presented, are most trying to the eye. The suggestion is made, therefore, that public inspectors of schools should order the use of sanitary paper for the eyes; that is, such as has no glazed or highly polished surface, the colors to be preferably gray or light blue, but no white, and in no case any brilliant or shiny colors.

SCHANZ reports the case of a glass-blower, who, while blowing a glass had the gas jet directed against his face by a puff of wind. This caused him to sneeze and violently blow his nose. His eye became displaced forward out of its socket, but was replaced with some force by a fellow workman. The procedure was repeated in the presence of Schanz, who had expressed some incredulity as to the accuracy of the report. A perfect result followed.

REVIEW.

CONTRIBUTION TO THE BACTERIOLOGICAL STUDY OF PHLYCTENULAR OPHTHALMIA. By Albert Michel, of Bordeaux (*Annales d'Oculistique*, October, 1898).

After giving a historical review of bacteriological investigations in reference to phlyctenular ophthalmia, Michel concludes that at the present moment the question is still obscure. Some regard this disease as due to the staphylococcus exclusively, some to the staphylococcus and pneumococcus together, and many others deny its parasitic origin and only admit the scrofulous and diathetic nature of the phlyctene.

Michel, in the effort to gain more light on this subject, has made bacteriological investigations under the direction of Dr. Lagrange and in the laboratory of experimental medicine of Prof. Ferré, of Bordeaux. He made cultures from human phlyctenes, inoculated the cornea of animals not only with the staphylococcus, but with the other microbes, also, which he met with in the interior of the phlyctenes, and finally made anatomo-pathological examinations of the lesions thus produced.

METHODS AND PROCEDURES USED.

1. *Method of collecting the contents of the phlyctenes.* In order to facilitate the task and to obtain the desired tranquillity and immobility, the child was chloroformed when necessary; but oftentimes only local anesthesia by cocaine was employed. Instead of using a platinum wire or a curette, the contents of the phlyctene were secured by means of a simple Pasteur pipette, having as fine a point as possible.

The infant being laid upon the table, and the eye well lighted, the bulbar and palpebral conjunctiva was carefully but thoroughly washed with luke-warm, sterilized water. A piece of moist, sterilized cotton was passed gently over the surface of the eye, especially over the phlyctene, in such a manner as to free the part from superficial germs. The lids were then held open by a sterilized speculum, so as to expose the diseased spot, and the point of a Pasteur pipette, made sterile by heat, was introduced into the interior of the pustule and its contents aspirated.

This little manœuver is absolutely without danger and with some precautions and a little practice it is easy to penetrate the phlyctene. The disease is not aggravated by this procedure, but on the contrary is often shortened.

2. *Method of making cultures.* The organisms contained in the interior of the phlyctenes were studied by two methods: 1, the direct method, consisting in examining with the microscope the preparations made directly from the contents of the phlyctenes; 2, the method of making cultures on solid media.

The first method is powerless to bring out the characteristics of the diverse microbic species, but it establishes their presence. The second or culture-method, however, has the great advantages of taking account of living germs only, of isolating them from each other, of distinguishing their species, and of characterizing them by their mode of development on different nutritive media, and their action on animals. It is this method which was adopted, using those nutritive media which are most commonly employed in such researches, viz., gelose, serum, gelatine, potato, and peptonized bouillon, but principally serum and gelose, immediately carrying to them the contents of the phlyctene. The tubes were then immediately placed in the apparatus of Arsonval, where they were submitted to a temperature of 35° (C). In coloring, the method of Gram-Kühne was employed, which, besides its simplicity, possesses the greater advantage of being a good means of classification.

3. *Method of inoculation.* The inoculations on the conjunctiva and cornea were made in rabbits in every case except one, which was in a dog. The technique was varied. In some cases the inoculation was made by depositing the germs on a point of the cornea slightly broken in the continuity of its epithelium by lightly eroding it with a sterilized platinum wire. In other cases, a mechanical inflammation of the conjunctiva and cornea was first produced in the animal, similar to that in a patient, using for this purpose the application to the conjunctiva of very fine, sterilized sand, which was forcibly retained for about twenty-four hours by keeping the lids closed with serre-fines. The animal's eyes were then washed, and by means of a sterilized needle, directed parallel to the surface of the eye, an infinitessimal quantity of pure culture was introduced underneath the corneal epithelium to a depth of one-fourth of a millimeter. The lids were afterward closed again by sterilized serre-fines, these being preferred to sutures, especially as it enabled one easily to determine from time to time the condition of the point of inoculation. In other cases the preliminary inflammation was not produced, but only the second step of the preceding method was executed.

Robust animals were used, but on the day of the inoculations their mode of life was changed by putting a number of them together in a small space, giving them barely sufficient nourishment, and not cleaning their cages. These very bad hygienic conditions were made in order to diminish the resistance of their organisms, and to create a nearer analogy to children afflicted with phlyctenular ophthalmia. No effort was made to produce experimental phlyctenes in man.

Results of the Cultures of Phlyctenes.—Out of eighteen cultures of conjunctival or corneal phlyctenes, there was found staphylococcus pyogenes aureus ten times, and staphylococcus pyogenes albus seven times. The staphylococcus pyogenes aureus was found in a state of absolute purity nine times. In the tenth case it was associated with bacilli not taking Gram, colored red, and presenting themselves in the diplobacillary form, that is to say, in the form of two short rods, separated by a very apparent, clear space. It was not rare for several diplobacilli to be seen in contact at their extremities and thus forming small chains. There was not noticed the presence of any capsules.

This bacillus behaved in the various media thus: Serum was liquefied in every case, this liquefaction being very rapid at the end of twenty-four hours. The cultures made on gelose always remained sterile. Bouillon itself presented only an insignificant disturbance, sometimes none, after several days at a temperature of 35° (C.).

From these characteristics the author thought it probable that this was the bacillus noticed by Morax in subacute, contagious conjunctivitis, and which was presented equally in the form of diplobacilli, sometimes united so as to form short chains, discolored by Gram, not growing on gelose, but developing well on coagulated serum which it liquefied.

Five times out of seven, the staphylococcus pyogenes albus was obtained singly and completely pure. In the sixth case there was a short bacillus, not colored by Gram and presenting, here and there, a change in form. The exact nature of this bacillus was not determined. In the seventh case there was not only the presence of the staphylococcus albus, but also well-recognizable sarcines, having the characteristic grouping in cubes, and on culture-media, all the characters of sarcina lutea.

Out of the eighteen cases, only one completely failed to yield the staphylococcus. In this were colonies of yeast, and a bacillus like that of Lœffler. These experiments, therefore, go to show that the staphylococcus is much the more frequent among the micro-organisms met with in the interior of phlyctenes.

Results of Inoculation.—The question now arises, are the micro-organisms found in the interior of phlyctenes susceptible of reproducing phlyctenular ophthalmia? As more than one species were found, experiments were made with all, first by inoculations on the cornea with the cultures of the staphylococci, and afterward with the others.

In eight staphylococcus-inoculations on the cornea of animals, three gave negative results, one was doubtful, and four presented lesions having the clinical aspect of the human corneal phlyctene. In the three negative cases a white, irregular spot was obtained, but not resembling a pustule. In the one which was doubtful, there was an elevated, milky patch. In every case, it was interesting to note the production of an ulcer very analogous to those in children which frequently succeed to corneal phlyctenes that have evolved more quickly.

In the other four cases, true experimental phlyctenes were obtained, having small nodes, more or less elevated, and the size of a millet-seed. Their development was always accompanied by the appearance or increase of the intensity of keratitis. These small phlyctenes had an average duration of ten days. At the end of this time, the cornea generally returned to its normal state. In two cases, however, there was produced, consecutively with the appearance of the phlyctene, an infiltration of the cornea, even with ulceration.

Six cases were inoculated with the undetermined bacillus which was found in one culture, and with the pneumobacillus, the pneumococcus, and the Lœffler bacillus found in the others. In all, except one, the introduction of these various microbes under the conjunctival epithelium procured the development of phlyctenes of the cornea. In the exceptional case, the inoculation of the pneumococcus which was very virulent did not affect the cornea, but became generalized and the animal died in less than forty-eight hours.

A very interesting fact noticed was the recurrence which was produced at the situation of an old phlyctene which, by the pneumobacillus, left a white cicatricial film. This is a phenomenon quite frequently produced in the child, and a striking coincidence between the evolution of the human and the experimental phlyctene.

Other check experiments were made and the experimental phlyctenes were microscopically examined. The conclusions at which Michel arrived were:

1. Phlyctenular ophthalmia is a uniquely parasitic affection. The essential cause is a microbe; the bad state of the organism is only the predisposing cause.

2. The cultures from the contents of the phlyctenes on various cul-

ture-media develop varied microbic agents. The stapylococcus is much the most frequent.

3. The inoculation of the stapylococcus and of the microbes of varied nature, but not of every nature, underneath the corneal epithelium of the rabbit, produces lesions analogous in appearance to the human type of phlyctene.

4. The anatomo-pathological examination of the experimental phlyctene shows that in man the lesion may not be limited to the subepithelial corneal space, but may be accompanied by superficial infiltration of the corneal tissue. The simple infiltration of this superficial part of the cornea may be capable, in man, as in animals, of giving rise to the phlyctene.

5. The phlyctene appears to consist in a lesion of reaction of the organism against the microbes which invade the cornea.

Alvin A. Hubbell.

Dr. J. J. B. Vermyne of New Bedford, Mass., the well-known Eye and Ear Surgeon, died last year. He was born in Holland fifty-four years ago, and served in the Dutch navy and in the Franco-Prussian war. He was an ideal professional man, and respected and beloved by all who knew him.

Motet's Operation for Ptosis.—Ptosis can be corrected by utilizing the synergy between the levator palpebræ and the muscles of the globe. Motet cuts a strip in the rectus superior and pulls it through a button-hole in the tarsal cartilage to suture it to the upper lid.—*Gaz. Med. de Paris, Nov. 12.*

Lesshaft believes that in the treatment of serpiginous ulcers of the cornea, more attention should be given to the lachrymal passages. The absence of any manifest dacryocystitis is no bar to the infective influence on the cornea of bacteria in the nasal duct. He slits the lower canaliculus and irrigates the duct and conjunctival sac with a 1 in 5,000 bicloride solution. He uses atropine, dusts iodoform on the cornea and anterior canthus, and then applies a moist dressing with protective to the closed lids. He reports most favorable results, and rarely has to employ galvano-cautery or Saemisch's section.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. Herman Knapp has recently been elected Vice President of the New York Academy of Medicine.

Dr. Frank Van Fleet and Dr. J. Edward Giles have been elected Surgeons to the Manhattan Eye and Ear Hospital.

Dr. H. M. Starkey has been appointed Professor of Ophthalmology in the Chicago Eye, Ear, Nose and Throat College.

Dr. George M. Gould of Philadelphia has been appointed Consulting Ophthalmologist to the Craig Colony for Epileptics.

After six years service as a member of the Parliament of Ontario Dr. G. Sterling Ryerson of Toronto, has retired from public life, and has resumed the practice of ophthalmology.

At the annual meeting of the Chicago Ophthalmological Society the following officers were elected: President, Dr. Lyman Ware; Vice-President, Dr. Cassius D. Wescott; Secretary and Treasurer, Dr. C. P. Pinckard.

At the twelfth annual meeting of the Board of Directors of the Washington Hospital for Foundlings, recently held, the medical staff was elected. Among others Dr. D. K. Shute was chosen Ophthalmologist.

Lord Kitchener of Khartum has recently consulted a well-known London Ophthalmologist, and we are glad to be able to state that the sinister rumors of threatened blindness which have been widely circulated are totally untrue.

The regular November meeting of the San Francisco Society of Eye, Ear, Nose and Throat Surgeons was held November 17th at the office of Dr. George H. Powers. Several interesting papers were read by Drs. Powers, Barkan and others.

DR. G. E. DE SCHWEINITZ has resigned as Professor of Diseases of the Eye in the Philadelphia Policlinic. The chair has been therefore abolished. An Emeritus Chair of Diseases of the Eye was created and Dr. de Schweinitz elected to fill it.

THE NOVEMBER meeting of the Society of the Washington Ophthalmologists and Otologists was held at the residence of Dr. J. H. Bryan, Dr. Swan M. Burnet, President, in the chair. Dr. Suter read an interesting paper on the "Twisting Power of Cylindric Lenses."

BOOK-HOLDER FOR SCHOOLS.—The Giessen High School provides each pupil with a simple, cheap, adjustable little book-holder to stand on the desk and hold the book open at the proper angle, made on the principle of a folding photograph case.—*Deutsche Med. Woch., Nov. 17.*

DR. JAMES THORINGTON, of Philadelphia, has gotten out a new light screen, which, while useful for general eye, ear, nose and throat work, is especially intended for retinoscopy. It has several points of material improvement over his old screen and may be purchased through Wall & Ochs, of Philadelphia.

DR. FROMAGET reports an interesting case of a healthy man, aged ninety-two, upon whom he operated successfully and quickly for cataract under a few drops of a 2-per-cent. solution of cocaine. In the second night severe mania occurred, lasting for sixteen days, which he attributed to constipation and retention of urine.

INFECTED BY ABSORPTION.—An eye quack, who advertises to cure all diseases of the eye by the simple process of "absorption," recently admitted to his house a patent with gonorrheal ophthalmia; and, as it is a poor rule that does not work both ways, and absorption at that time was working freely, many of the other inmates caught the disease. Each sufferer was assured there was nothing the matter, and that it was all in his eye. The true nature of the disease was finally discovered in time to save the sight of the victims, and now the latter are suing the quack in the hope of absorbing some of his dollars as a sort of salve for their sore feelings and sore eyes.—*Chicago Medical Recorder.*

AT A MEETING of the Cincinnati Academy of Medicine, held November 21st, 1898, Dr. Louis Stricker read a paper on the "General Practitioner and the Optician versus the Oculist," which was discussed by

Drs. Ayers, Tangeman, Vail, Marcus, Drury, De Beck and Christian. Dr. Robert Sattler reported a case of proptosis in which the eyeball had been forced forward by an upper and forward movement of the inferior orbital plate. Osteosarcoma was diagnosed and an operation occurred. Exploration of the maxillary sinus disclosed simple rarefaction. No fluid or tumor was found. The parts were replaced into their normal condition, the wound closed and drainage used. A good result followed.

THE editor of this department wishes to again make a plea for assistance in compiling items of news for ophthalmologists. These columns might be made much more interesting if every subscriber to the RECORD would take a little personal interest in the matter.

If you know of any ophthalmologist who has perpetrated matrimony, or been compelled to die, received some kind of appointment, or any other thing of kindred nature, which has interested you, and which you might reasonably suppose would interest others, please transmit such items of news to the above address, and you will incur the lasting obligations of the editors of this journal. If you see any item in any of your medical journals of an ophthalmic nature, that is interesting, please clip it out or copy it, and send it.

A NEW addition to ophthalmological literature is the "Anales de Oftalmologia," published monthly in the City of Mexico in the Spanish language. The editors are Drs. Troncoso of the City of Mexico, Vélez of the City of Mexico, Fernández of Havana, Cuba, and Oliver of Philadelphia, U. S. A. The collaborators are Drs. Lagleyze and Werdicke of Buenos Ayres, Gómez of Bogota, Flores of Lima, Cienfuegos of Santiago, Chili, Guzman of Managua, Nicaragua, Debayle of Leon, Nicaragua, Sattler of Cincinnati, Hale and Casey Wood of Chicago, de Schweinitz of Philadelphia, Bryant of Omaha, Darier of Paris, Antonelli of Paris, Demicheri of Montevideo, Uruguay.

The third number contains twenty-five pages of reading matter, and contains an article by Frank S. Milbury of Brooklyn, New York, on "Insufficiency of the Ocular Muscles with Treatment:" a report of the Ophthalmological Society of the United Kingdom, held June 9th, 1898; a report of the meeting of the Ophthalmological Society of Chicago, held May 10th, 1893, and other interesting matter.

This periodical starts out under good auspices, and there seems to be no reason why it should not succeed. We wish it good luck.

Defective Sight and Hearing in Public School Children.—The suggestion made by the committee of public health of the medical society of the County of Kings that an examination should be made of the sight and hearing of the children attending the public schools of Brooklyn, has borne abundant and valuable fruit. During 1897-8, 50,000 children were examined with the result of finding that nearly one-third had defective sight, hearing or both. The parents of these children were notified, and the increased attendance upon the dispensaries has been most marked. Unfortunately, these institutions have no funds with which to supply spectacles to the poor, and to meet this want a fund has been established under the fostering care of the Brooklyn Teachers' Association, which has shown its great interest in the movement by contributing $150 as a nucleus of the fund, and by undertaking to solicit funds from those interested. This fund is to be drawn upon only by requisition from a school principal, endorsed by a physician who must certify to the worthiness of the case. It is estimated that $5,000 will be needed. Contributions may be sent to Miss Jessie H. Bancroft, treasurer, director of physical training in the Brooklyn public schools, at 131 Livingston street, Brooklyn.—*Brooklyn Medical Journal.*

Sattler's Operation for Myopia.—This operation has been performed on thirty patients up to date, and has proved more than satisfactory; the operative astigmatism is very slight as a rule; the eye heals much more rapidly than with other methods, and without the least inflammation, in nearly every case. He first makes an incision 5 to 7 mm. in length, perpendicular to the vertical meridian and about 1.5 mm. from the edge of the cornea, with a Weber hollow lancet. The anterior capsule is then seized with a sharp hook, and the lens substance loosened at the equator and from the posterior capsule. A Daviel spoon is then pushed a little way into the front chamber, slightly pressing down the upper lip of the wound, while another Daviel spoon is applied to the region of the lower edge of the cornea in a horizontal position, with a moderate pressure backward. By this maneuver the entire nucleus is evacuated and the process is repeated a second or third time, as long as it brings lens substance without difficulty. The iris is then replaced and one drop of atropin instilled. The amount of the lens substance thus evacuated amounts to two-thirds or even three-fourths of the entire lens. In some cases this intervention is sufficient, but usually discission of the posterior capsule is required later. He has recently applied this same operation to nine cases of lamellar cataract with perfect success.—*Klin. Therap. Woch.*

THE INVENTION OF SPECTACLES.—Who first invented spectacles? These aids to vision appear to have come into use about the fourteenth century. The earliest reference to them is in the work of Bernard Gordon, Professor of Montpellier, who speaks of a collyrium devised by him which allowed a person to read without spectacles. In 1360 Guy de Chauliac in his treatise on surgery refers to the use of lenses. The invention of spectacles is sometimes attributed to Roger Bacon, who died in 1294. Further research, however, has shown that in 1285 Savino degli Armati, a Florentine, worked glass into the form of a lens as a help to vision. For him, therefore, may justly be claimed the honor of having invented spectacles. He died at Florence in 1317, and was buried in the Church of Santa Maria Maggiore. On his stone is the following inscription:

Qui Giace
SAVINO DEGLI ARMATI
Di Firenze
Inventore Degli Occhiali
Dio Gli Perdoni Le Paccati
Anno DMCCCXVII.

(Here lies Savino degli Armati of Florence, inventor of spectacles. May God forgive him his sins! A.D. 1317.)

A YEAR or two ago an artist from San Francisco who wore a glass eye came to Yokohama and established himself in a little bungalow on the outskirts of the city.

The weather was extremely warm, and before the stranger had become settled he was besieged by a number of coolies who wanted to get the job of fanning him at night. The artist looked over the applicants and finally selected an old man who brought excellent recommendations from his last employer.

When it was time to retire the artist took out his glass eye, laid it on the stand at his bedside, and went to bed. The old man picked up his fan and the San Francisco man was soon asleep. He slept peacefully for an hour or two when he was awakened by a chorus of buzzing insects about his head. He looked about him and found that the man whom he had hired to fan him was gone.

The next morning when he went in search of another coolie he was amazed to discover that no one would work for him. He was looked upon as a wizard and worker of miracles, with whom it was unsafe to be alone. The old man had gone among his friends and told how the

Californian had taken out his eye at night and laid it on a stand in order that he might watch his servant at night and see that he kept his fan in motion. The old coolie's story created such excitement that the San Francisco man was never able to get another Japanese to fan him after that.

THE FOLLOWING article has appeared as an editorial in one of our exchanges. In view of the fact that a prominent specialist in Denver, Colo., has recently, in print, openly advocated the paying of commissions from specialists to family physicians for patients sent from the latter to the former, the following editorial opinion is interesting:

THE COMMISSION EVIL.

"An evil has lately sprung up which is not specially creditable to those concerned; this is the practice of paying commissions or rebates by specialists to persons bringing them cases. A few years since the medical world was set sneering, by a well-authenticated report that in a certain city the physicians sent out drummers to board incoming trains and by skilful touting to secure business for their respective employers. Fabulous tales were told of the wealth piled up in this way, and when the light was turned on this practice, the Legislature enacted a law that all persons engaged in this business should wear a badge. This put an end to this scandal. There is little difference between these now obsolete methods and those practiced in many of our Northern cities, only that professional men are employed as drummers and the slice of the fee is larger.

"Another variety of this commercialism has reached the hitherto honest practitioner in this country. The plan is this: Dr. A. brings a patient to Specialist B. or General Surgeon C. A. says, 'here is a man abundantly able to pay a good fee, charge him liberally, but I want one-third or one-half.' Should the specialist or the general surgeon refuse to accede to this proposition, the patient is taken elsewhere to some less scrupulous brother.

"The wrong is to the unsuspecting victim; he trusts his family physician to send him to the specialist of his selection to be sure, but he has a moral right to expect that selection to be made on honest judgment and not with regard to the division of a great fee. Nor is this practice fair to the specialist and surgeon, for they get the credit of charging an exorbitant fee, only part of which they actually receive.

"No. Let each practitioner have his regular and proper fee, and if any division must be made, let the patient know exactly whom he is paying."

THE FOLLOWING interesting letter has appeared in a recent number of the *Journal of the American Medical Association:*

BUYING PATIENTS.

HARTFORD, CONN., Dec. 1, 1898.

TO THE EDITOR:—Recently a physician who has attained some prominence in his neighborhood wrote me asking what I was accustomed to give the family physician who sent his patient to my care. I replied that I never bought practice and never gave anything to physicians who sent me cases. He answered that he always received a fee of $10 for sending cases who could pay $20 and more a week. Where the bills amounted to several hundred dollars, most medical men sent him 5 per cent. on all accounts over $200. From inquiries I found that two gold-cure establishments had received some cases from this physician, and an obscure New York specialist had also received and treated some cases sent by him. Within five years, since the prominence of "gold cures," I have heard of offers of this kind from managers of such places. In all my long experience with the profession, I have never before been approached by a reputable man, and I am confident that a very few medical men would ever stoop to buy or sell patients in this way. The real specialists, who depend on the profession for their cases, feel bound to the medical man to return the case to his care again and renewed confidence of the skill of the family physician. A kind of unwritten law has grown up, in which the specialist assumes the care for a time, and expects to return it to the care of the family physician for further and more protracted treatment. In my experience in the care of alcoholic and opium takers, after a few months' residence in an asylum, the return to the family or general practitioner is a very essential part of the success of every case. The best results come from the general after-cure by the physician outside of the asylum. The case is sent to me by the physician for such care as he cannot give at the time and place. When the acute symptoms subside, and restoration begins, it is often better to go back under the family physician's care. In all this the specialist acts as a consultant and has no claim on the patient, nor is he under any special obligations to the physician who sends the case. The physician is rather under obligations for the favor of special treatment and return of the case to his care again. The idea of buying and selling the privilege of treating the case is repulsive to all sense of honor and professional courtesy. The physician sends his case to the specialist simply because it is the best interest of the case. No other course should receive the least attention. Very truly,

T. D. CROTHERS, M.D.

Dr. B. Beheim-Schwarzback of London writes from Kimberley to say that during a visit to South Africa he was acting on a suggestion made to him by the late Mr. Ernest Hart. He investigated the power of sight of the natives of the soil. His notes are as follows: I have examined in the Eastern Province chiefly, but also in Kimberley and in some of the towns in the middle province, a total of 1,853 black people—Kaffirs, Basuto negroes, Hottentots, and a few bushmen. I found it impossible for my purpose to separate members of different tribes. In the few instances in which I compared the sight of one with the other, no differences worth mentioning were detected. The so-called native locations and the native schools gave me the most material. Out of 1,853 persons examined, 1,007 were females and 846 males; all were, or seemed to be, under the age of 30. The result was as follows:

1 had power of sight almost.......................20/60
3 had power of sight about.......................20/50
35 had power of sight about.......................20/40
218 had power of sight about.......................20/30
1,509 had power of sight about.......................20/20
50 had power of sight about.......................20/15
28 had power of sight about.......................20/10
9 had power of sight about.......................20/5

In other words, out of a total of 1,853 natives, 1,509 possessed a power of sight equal to the normal sight of Europeans, 257 had a stronger and 87 a weaker sight than the normal-sighted Caucasian. The phenomenal strong vision of 20/60 (which means that objects were noted at a distance of 60 feet, which an emmetropic white person could notice at a distance of 20 feet only) was in a Kaffir girl of 14 years of age. The subnormal sight mentioned was due to myopia acquired at school, thus proving that the same detrimental causes which produce short sight in children of the white race have a similar effect on the optic organ of the dark race.

It was most difficult to ascertain in many cases very exactly the power of vision on account of the uncertain and hesitating statements sometimes made. But I have given the correct average measure. The result in toto was somewhat disappointing, inasmuch as the superiority of native eyesight over the European is by no means so general as it is often supposed to be, so far as South Africa is concerned.

With a few exceptions, all the natives tested in regard to their power of vision were also tested in regard to their perception of colors. But not a single case of color blindness or of hesitation in perceiving even slight shades of color could be detected amongst them, which result (having in mind the negative results of similar tests made among the South Sea Planters, the Maoris of New Zealand, the aborigines of Australia, and the Papuans) seems to point to the probability that color blindness is one of the many Danaic gifts which civilization has bestowed on the Caucasian race.—*British Medical Journal.*

Carbolic Acid in the Eye.—Dr. Ray of Louisville reports a medico-legal case of interest, in which a medical friend of his, practicing in central Kentucky, was concerned. Dr. A. was accused of accidentally dropping carbolic acid in the eyes of a new-born infant suffering with ophthalmia naonatorum. He was sued for damages, and Dr. Ray was asked to testify on the witness stand. The circumstances were these: A child suffering with ophthalmia neonatorum had been ordered a solution of nitrate of silver and the nurse in attendance placed the bottle on the mantel, and along beside it she also placed a bottle of carbolic acid which had been used in disinfecting the vessels around the lying-in-chamber. The doctor was unaware of the fact that there was any carbolic acid in the house. He came in one evening about dark to see the child, and it was apparently doing very well in about the second week of a purulent ophthalmia involving both eyes. He had the nurse take the child in her lap near the window, and he walked to the mantel and took up the bottle which was in the place he had been in the habit of finding the bottle of nitrate of silver solution, then took a medicine dropper and drew a few drops of the fluid into it and sat down to cleanse the eyes preparatory to dropping into them the solution. As usually happens, the lids were very much swollen, and in getting them open they became everted, so it was difficult for him to expose the cornea. With the lids everted in this way he dropped a drop of carbolic acid upon the exposed conjunctiva. He stated on the witness-stand, however, that he was unable to see the cornea, and that the carbolic acid only came in contact with the under surface of the lid. It ran down the side of the face over the lid and produced a little white discoloration characteristic of carbolic acid burning, and he immediately thought something was wrong. The child cried very hard, and he asked the nurse what the liquid was. She said it was the medicine he had placed upon the mantel. He went again to the mantel and found the bottle of nitrate of silver solution there untouched, and also found that he had used carbolic acid instead. He immediately washed the eye as thoroughly as possible and applied some vaselin. The child recovered with a large central leucoma, and the doctor was sued for $5,000 damages. Asked if he ever used carbolic acid about the eyes, Dr. Ray told them he did. Asked if he ever used chemically pure carbolic acid, he replied that he had done so a number of times; that he frequently applied pure carbolic acid to corneal ulcerations with a probe wrapped with absorbent cotton. Asked what he thought would be the effect of carbolic acid upon the cornea, he stated that it would be superficial; that the effect of pure carbolic acid to the healthy cornea would be to simply erode the epithelium. The doctor was mulcted for $350. Dr. Ray does not believe that pure carbolic acid will produce a perforation of the cornea; it will destroy the epithelial layer, but that will be all. But in an eye of ophthalmia neonatorum, the disease itself, in connection with the erosive effect of carbolic acid, might result in perforation of the cornea. It is well known to all that under the most approved methods of treatment a great many eyes are lost from ophthalmia neonatorum.—*American Practitioner, October 15th.*

We quote verbatim an article which has recently appeared in the editorial columns of the London *Lancet:*

"Our contemporary, the *Optician*, gives in this week's issue the questions set by the examiners of the above bodies for their optical examinations. The examination of the Spectacle Makers' Company is the first of them and is divided into two parts—a *vivâ voce* and a written, the latter occupying two hours and a quarter. It is stated that ninety-three candidates presented themselves, and that among these were a large number of old members of the industry, the provinces being well represented by candidates from Leeds, Tunbridge Wells, Deal, Tenby, Carlisle, Kilmarnock, and other places. The questions seem to have been carefully thought out, and if anything like satisfactory replies were obtained the standard of knowledge in the possession of the opticians is very high, and it is clear that those who pass the examination will not only be thoroughly grounded in their subject, but will be very competent judges of the prescriptions sent to them by ophthalmic surgeons. As it is certain that a large proportion of the public do, and will always continue to, apply to the optician for incipient failure of vision, it is obvious that the glasses selected by the optician should be given with judgment and a sound knowledge of the principles of optics. At the same time the opticians should remember the motto, "*Ne sutor ultra crepidan*," and take care when unusual or suspicious phenomena are observed to recommend the patient to obtain the advice of a surgeon. We append a few of the questions set at the former of these examinations. 1. How would you determine the focal length of a simple biconvex lens with faces of equal curvature? Give all the practical methods you know of. 2. In what way is the position of the principal focus of a lens dependent upon the choice of the curvatures? Illustrate your answer by reference to the positions of the front and back foci of a plano-convex lens of +20 D. Does it matter which surface you turn toward the source of light as regards definition? 3. A prescription is given you as follows: — 3 D. C. axis horizontal ⊃+1.5 D. C. axis vertical right and left. State the different methods of working such a lens and give reasons for your choice of curves. 4. A boy, aged 10 years, has vision = 10/40 and with −2.5 D. S. he sees 20/30, but on testing his P. P. is found to be 12cm. What is probably his defect, and give your reason? The British Optical Association's examination has also been held this month and twelve candidates presented themselves, out of whom only one failed to pass. This examination occupies about two and a half hours and is divided into three parts—optic, dioptric, and opthalmometric. Among the questions were the following: 1. Show how images formed by concave lenses are always vertical, erect, and diminished. 2. Transpose the following lenses into other combinations: (a) 1.73 cyl. axis 45° ⊃ + 3.25 cyl. axis 135°; (b) + 3.00 spher. ⊃ −1.5 cyl. axis 105°; (c) + 1.25 sph. ⊃ + 2.75 cyl. axis 90°. 3. In dislocation of the crystalline lens, the periphery of the lens being located, say, in the middle of the pupil: how would you prescribe lenses to assist the refraction for distance? These are sufficiently reasonable questions, and no exception can be taken to them from a professional point of view. We must add, however, that in the ophthalmometric part of the examination of this association some of the questions trench on purely medical subjects and imply that the young optician has gone somewhat beyond his métier—for example: Question 3 is, How would you diagnose tobacco amaurosis? Question 4 is, How would you measure scotoma? Question 7 is, What are the indications that would lead you to suspect incipient glaucoma? If the candidate be expected to diagnose tobacco amaurosis, why should he not know the retinal changes in Bright's disease and diagnose the nature and position of an intracranial lesion from the observed defects in the field of vision? Surely, all this is quite outside the optician's work."

THE next number of *The Lancet* contained the following letter:

To the Editors of The Lancet:

SIRS—You make a comment in *The Lancet* of November 19th on the above in a tone of modified approval. If one may judge from the advertisements in the newspapers this association exists chiefly to furnish material for advertisements by its members. The prescribing chemist may be objectionable, but he does not generally do actual harm, whereas the consulting optician (or eye-sight specialist) often causes harm and pain to young people who may consult him. My experience is that an ammetropic or slightly hypermetropic young person in his teens, doing some extra work and having a certain amount of spasm induced, is frequently by these advertisements lured to the "eyesight testing-rooms," where probably a couple of pairs of slightly differing low concave spherocylindrical spectacles are supplied, and then for a time the patient sees well, but ultimately in a few weeks worse spasm is induced and more pain.

The proportion of girls with defective visual acuity is greater than it is in boys at every age of school life; in them this spasm is exceedingly common, and it is girls who most frequently suffer from the wrong glasses of the optician. The method, so far as I have been able to make it out as advertised, "Sight testing for the general practitioner," is on a level with that of the "honorable company" of spectacle sellers, being one which neglects spasm of the eye, and is on that ground to be condemned as likely to be unreliable if used to prescribe spectacles for young people. We now have our Board school children tested as to visual acuity, and errors of refraction become obvious as soon as young people go to work, so that glasses are becoming more necessary every day at earlier ages. The correction of the causes of the pain and inconveniences from refractive error is part of a medical man's work and should not be allowed to pass into the hands of those who seem to be organizing themselves into a vested interest, whilst at the same time their methods for the reasons given above are daily becoming unsuitable and actually harmful to increasing numbers of their patients. I am, sirs, yours faithfully,

JAMES KERR,

Honorary Surgeon to the Bradford Eye and Ear Hospital, Bradford,
November 22d, 1898.

⁂ We think the association will find our approval very modified.—*Editor L.*

If this sort of thing keeps on it will soon be impossible for even an ophthalmologist to tell the difference between an oculist and an optician.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, MARCH, 1899. No. 3. NEW SERIES

ORIGINAL ARTICLES.

SOME EXPERIMENTS WITH THE GIANT MAGNET.*

BY HAMILTON STILLSON, M.D.

SEATTLE, WASHINGTON.

Illustrated.

The writer had hoped to include in this paper the report of some experiments on the influence of the force of magnetism upon the composition of photographic plates. The series of experiments in that line are not yet completed. The report of them will have to be deferred. Enough has been accomplished, however, to induce us to hope that with a suitable plate, a suitable magnet and a suitable object results can be obtained from magnetism which will compare somewhat favorably and will resemble somewhat the effects of the X-Ray in producing shadowgraphs upon photographic plates; and the writer mentions his uncompleted experiments at this time only in the hope of stimulating others to experimentations on this subject.

Many other perhaps more practical and certainly more easily conducted experiments also need to be made with the giant magnet, for instance, determining the proper manner of manipulating the magnet in the extraction of paramagnetic foreign bodies from the interior of the eye. For, as a matter of fact, results from the use of the small hand magnet and results from the use of the giant magnet have until to-day been far from a realization of the reasonable hopes entertained by oculists possessing such magnets. Surely every one who has had experience in the use of the giant magnet has been surprised at the often untoward reaction following its use.

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*Read before Western Ophthalmologic and Oto-Laryngologic Association, New Orleans. February, 1899.

From the series of experiments whose detailed account would unnecessarily burden this paper, and from observations on the behavior of the magnet and the attracted foreign body in actual office operation the writer would make the following conclusions:

1st. The field of magnetization extending from the tip of the magnet, and appreciated by the vibration of a small magnetic needle, is about ten meters, varying of course with variations of the current.

2nd. The actual working distance is usually contact of the eye with the magnet.

3rd. With the eye at a distance of five millimeters from the tip of the magnet, and with six or eight amperes of current, the magnetic force will be about 130 gm.: multiplying the distance by three divides the force by seven.

4th. Dividing the weight of the object by two divides the attraction by six if the object be iron, and by about four if the object be steel.

5th. A paramagnetic body, as iron or steel, becomes a magnet upon being attracted by a magnet and assumes opposite poles. Not only should the shape of the foreign body be recognized as fully as possible before operation, but the operator should determine what position he would prefer it to be in for extraction and which end he would desire to come foremost.

6th. Usually the best line of force to use is the line that radiates from the tip of the magnet. In Fig. 1 the directions of the lines of force from the magnet are indicated by knitting needles which have been attracted into the positions represented in the figure. The central line of force should be applied to the long diameter of the foreign body, if possible, in such a way as to place the foreign body in the position most favorable for extraction.

7th. The management of the foreign body will depend more upon its shape than is generally believed. If the object be disc-like it should be made to saw its way with the edge forward; if it be pyramidal the point should be extracted first.

8th. To accomplish this purpose the eye and the magnet should be relatively in position and still before the current is turned on. It is a mistake to place the patient at a distance and cause him to approach the magnet gradually.

9th. A rheostat should generally be used with the current, especially if the body be large. Only a very slight current should be attempted at

first or until the piece of steel is made to assume a position easy for its accouchement. The placing of the foreign body, it may be said again, in proper position for making its exit is of as much importance as is the proper presentation of the infant at parturition.

10th. Knapp says that foreign bodies in the vitreous are arranged by preference in the lower part of the vitreous, but experiments tend to show that this will depend upon the size and shape of the foreign body, the length of time it has been in the vitreous, and the character of the vitreous. For instance, blood in the vitreous will well up and float the foreign body towards the point of exit of the blood. This will be especially the case if the piece be small (less than 0.02 gm.). Then, too, if the piece be small and the vitreous somewhat fluid, the foreign body, if given time, may sink. The vitreous humors of different eyes differ greatly as to their liquidity. If the vitreous be not especially fluid, a small piece may float where it first lodged.

11th. Small pieces with great difficulty penetrate so far as the vitreous ; a piece weighing less than 0.02 gm. will often stop in the cornea or sclera. Great force is required to cause such a piece to pass on through the lens or through the sclera. They will often be caught in the iris (especially if the iris is somewhat distant from the lens. They seem to be caught by the iris as a falling acrobat is caught by his net or the fish is caught by the seine.

In two of my cases in practice the large pieces had passed on through the lens into the vitreous, while the small pieces were caught in the iris (sifted out by the iris), where they remained.

12th. Small pieces that are behind the iris are difficult to remove by means of the giant magnet. Under its attraction the foreign body will cause the iris to bulge up, or be dragged one way or the other, but they will not cut their way through the iris. This attempt at their removal will not only fail, but the effort at removal will do great violence to the iris. A preliminary iridectomy, or at least iridotomy, should be performed ; then a small hand magnet (the Hirschberg or other form) should be used in preference. This rule will apply also to small pieces under the conjunctiva. A small piece can be made to excavate its way around under the conjunctiva without making its exit, the conjunctiva in the meantime being bulged up into a wavy cone. (An attempt has been made in Fig. 2 to show this lifting up of the conjunctiva when a small piece of steel under it is attracted by the magnet.) The tip of the Hirschberg magnet inserted through a slit in the conjunctiva is preferable to the giant magnet in such cases. Snipping the foreign body out with forceps and scissors in such a case, or touching the foreign body with a small cautery point and letting the foreign body come out on the eschar, are equally successful ways of disposing of small pieces under the conjunctiva.

13th. Large pieces may be made to perforate the iris or conjunctiva if they have a suitable shape and are managed properly.

14th. Large pieces should have the current turned on slowly, and time should be given them not only to find their point of least resistance and place themselves in proper position to avail themselves of it, but to cut their way. Fifteen or twenty minutes' application of the magnet may sometimes be necessary. Pieces weighing in the neighborhood of 2 cg. may be made to swim about in the vitreous in any desired direction.

15th. Haab extracts foreign bodies from the vitreous by placing the point of the magnet at the sclero-corneal junction and causing the foreign body to roll around the edge of the lens and so on into position behind the iris, where the foreign body is made to tear its way through the iris or made to come through a preparative opening in the iris. Small pieces may perhaps be best extracted in that manner, but large pieces almost invariably do damage to the edge of the lens and to the iris. A better plan with large pieces, especially with those that have entered through the sclera without injuring the lens, is, after definitely locating them and arranging them in proper position for extraction, to make a hole in the sclera nearest to where they lie if convenient and extract them through the opening.

16th. The best way for opening the sclera will often be with the galvano-cautery. It is less painful and seems to be less liable to sepsis. The slightly prolonged drainage afforded by it is often necessary for success.

17th. If the operator is in doubt as to whether the size and shape and location of the foreign body render it suitable of extraction from the vitreous around the edge of the lens and through the iris, and he wishes to make a tentative trial of the magnet, instead of applying the tip of the magnet to the sclero-corneal junction as recommended by Haab, a good plan is to remove the tip of the magnet and insert the eye into the opening at the end of the magnet as far as the sclero-corneal junction, applying the current slowly. Removing the eye from the magnet for repeated examination will enable the operator to determine what part of the ciliary region the foreign body will approach.

18th. It is not always best to endeavor to remove the foreign body from the opening it has made in its entrance. Of course a foreign body that has passed through the cornea and iris and lens and remains in the back part of the vitreous would not be removed through the cornea. A ragged piece that has entered through the upper part of the sclera or ciliary body, but which lies in the lower, anterior part of the vitreous, is often best removed through a cautery puncture in the lower part of the sclera.

19th. The giant magnet forms a good means of determining whether the foreign body be free in the vitreous or not. If the attraction of the foreign body causes much pain the foreign body may be judged to be attached to the choroid and sclera. Yet the giant magnet should seldom, if ever, be used for such purposes of diagnosis. Such haphazard application of the force is almost certain to displace the foreign body disadvantageously.

20th. The writer is not experienced in the use of the sideroscope, but from the recent reports concerning it it doubtless is far inferior to the modern improved X-Ray appliances in determining the size, shape and location of a foreign body. In the writer's experience, however, fully half of the foreign bodies can be pretty definitely estimated by the ordinary means—ophthalmoscope, transillumination, etc.

21st. The question of anæsthetics is one that must be settled by circumstances ; that is to say, by the character of the patient and the conditions of the case. Blacksmiths, iron molders, saw filers and others accustomed to getting pieces of iron or steel into the eye, can usually be relied upon to bear the pain and to place the eye in suitable position for the operation without an anæsthetic. Wood-choppers usually are not so tractable. In this wooded country where steel wedges and steel sledges are almost universally used in splitting logs, wood-choppers furnish a large quota of cases. Their eyes are seldom struck, but when struck are injured badly. Large, sharp, jagged pieces from the edge of the hammer rebound from the wedge into the eye, where, in many instances, they pass entirely through the eyeball and lodge in the bone behind. Many of the cases of foreign bodies in the eyes of wood-choppers require general anæsthesia. If the foreign body is easily seen and promises to be easy of extraction cocaine anæsthesia will be sufficient. In some instances the writer has, without apparent detriment, fortified the cocaine with the use of the suprarenal gland extract. Where general anæsthesia is necessary it should be profound, for the operator should have absolute control of the position of the eye for a sufficient length of time.

TWO CASES OF CONGENITAL OPACITY OF THE CORNEA.

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Illustrated.

Four years ago Master, F. W., three years of age, with corneal opacities of the corneæ, came to my office for treatment. At that time the irides and pupils were scarcely visible behind the densely opaque corneæ. The mother informed me that the opacities were not so dense then as they were at birth, and that until the child was several weeks old the corneæ were as white as the sclerotics. The child received no treatment before coming to my office, and as the corneæ had cleared so much in three years, the mother was advised that the eyes would take care of themselves and no treatment was suggested. The child is now seven years of age, and the corneæ have become quite transparent and vision is about 20/70 in each eye. Fig. 1 is from a photograph taken a few weeks ago, in which the pupils and corneæ are plainly visible, which is quite a contrast to the condition of the eyes four years ago.

The appearance of the left eye in the photograph is that of a central corneal opacity, which is only a reflection of light on the partially opaque corneæ. The opacities have the ground-glass appearance and are evenly distributed. The child is bright, can read figures and letters when not too small, but can not see well enough to attend the public schools. However, he plays with other small boys in the streets and goes alone around the city.

The second patient is shown, at one year of age, in fig. 2, and at three years of age in fig. 3. The latter was taken in October, 1898.

This little patient was not so fortunate as the first, and fell into the hands of an itinerant physician.

The writer was called in consultation with the family physician when the child was about a week old, and no difference was discernable in the character of the opacity from that of the first child, except that the corneæ in the second patient was not so opaque immediately after birth. The corneæ, however, began to clear rapidly within a few weeks, and is now normally transparent. Had the eyes been left alone in other respects the child would have, undoubtedly, had good sight. This "trav-

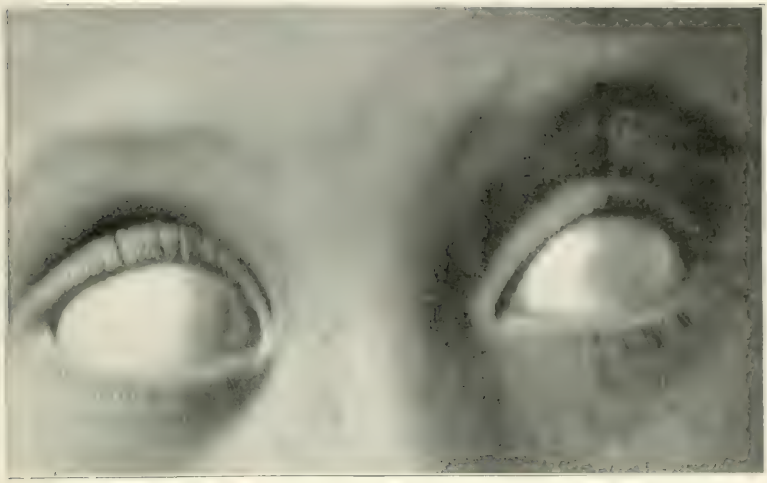

Fig. 1.

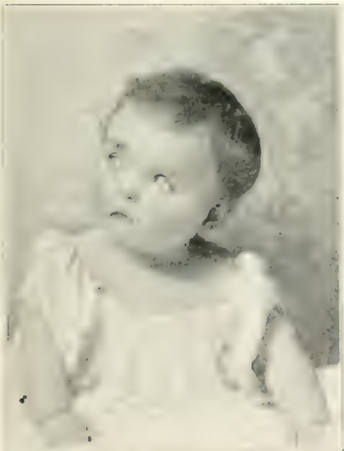

Fig. 2.

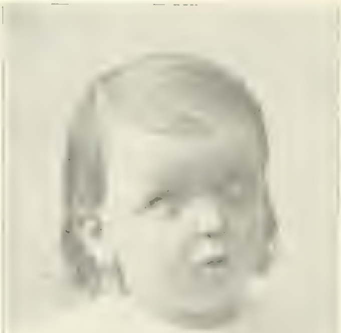

Fig. 3.

eling oculist" insisted that the lens was also opaque (he could see through the densely opaque corneæ), and performed discission on both eyes, beginning the operations when the child was fourteen days old, and followed by instillations of eserine.

Iritis closed both pupils firmly, and the complete anterior surface of the irides beçame adherent to the corneæ. The left eye has atrophied considerably, but the right eye retained its normal size. The writer was asked two years ago to see the little patient with Dr. Schneider, of Milwaukee. An iridectomy was performed at that time and an anterior chamber established. A more extensive iridectomy, to be performed some time in the future, may result in fairly good vision. My experience with these two cases has quite impressed me with the belief that congenital opacities of the corneæ due to arrest of development improves sufficiently well to justify their being left alone. The treatment should be of a stimulating character.

A SERIES OF CASES OF MALARIAL KERATITIS WITH A REPORT OF THE BLOOD EXAMINATIONS.*

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A distinct form of inflammation of the cornea due to malaria, and known therefore as malarial keratitis, is now recognized, thanks to the efforts of Dr. Chas. Kipp of Newark, N. J., who reported a series of these cases to the *American Ophthalmological Society* in 1880, grouping them together on account of their presenting similar appearances and running similar courses, and calling them malarial because he found all the patients had or recently had had that disease.

Previous to this date a report had been made by Horner in 1871 on a vesicular inflammation of the cornea occurring in connection with very many general diseases and associated with herpes facialis, and hence called Herpes Frebilis Corneæ. In 1880, the same year that Kipp's first contribution was published, two others on the same subject appeared, one by Mlle. Kendall, a pupil of Horner, and one by Godo, the latter finding malaria to be present in one-third of the cases. In 1884 Hansen-Grut presented to the *Eighth International Medical Congress* a study of what he called Dendritic Keratitis, and since he does not mention Kipp's work he was probably not familiar with it, nor was Emmert, who the following year, independently both of Kipp's and Hansen-Grut's reports, published a contribution to what was probably the same disease under the name of Keratitis Exulcerans Dendritica Mycotica, a name which covers all contingencies. A second paper by Kipp in 1890, and one by Wilder of Chicago in 1893 about complete the American contributions to the subject. Now it is more than likely that all of these descriptions apply to one disease, which is probably subject to slight variations under different circumstances, except that I am inclined to think that the observation as to the occurrence of vesicles is a mistake, and that the eruption is always papular at first instead of vesicular. The condition has undoubtedly been observed in other diseases than malaria (in one of mine it is said to have followed yellow fever), but as practically all of these cases which I have seen seemed to be dependent on the presence of a malarial infection as verified by the blood examination, and have presented uniform clinical features, I believe they properly belong to the category of malarial keratitis as described by Kipp, and which I believe is a characteristic form of corneal disease; so much so that I am of the opinion that a diagnosis in these cases can generally be made with accuracy without the blood examination. As malaria is the most common of diseases in the locality in which I practice, it may be more or less accidental that I have personally seen this form of keratitis in connection with it alone; but in reply to that I would say that I would at least occasionally see it complicating some other infection, with all of which we are provided, and especially La grippe, which has prevailed with us in a severe form since January first, if it did not have a predilection for the victims of malaria. Such has not been the case, as the histories of my patients will show.

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*Read before the Western Ophthalmologic and Oto-Laryngologic Association, New Orleans, February, 1899.

For the past few months all of these cases which have come under my observation have been turned over to a competent hematologist for an examination of the blood with reference to the presence of the plasmodium malariæ, and it is on account of the interest which attaches to this feature which prompts me to bring this report before you.

I have not seen this form of keratitis in any person under the age of sixteen, but have seen it in male and female, white and black. In the first place, there is a history of some form of malaria, and usually the intermittent. Following, sometimes the first chill, sometimes the second or any subsequent one, the patient's eye becomes inflamed. Examination reveals a minute whitish "hair line," or rarely point, on the cornea, consisting of a sup-epithelial exudate. The line may be a row of points, small round lesions like a string of beads, perfectly coalesced, as Kipp suggests, but I have never been able to satisfy myself that this was the case. There is a varying amount of bulbar injection, usually slight, with pain and photophobia, the latter being subject to variation, and these are all of the subjective symptoms I have noted. The supra-orbital tenderness noted by Kipp and others has been wanting or at least not marked in my cases. On looking at the cornea in this early stage of the disease, the pathological appearance is scarcely manifest except with strong illumination, and the condition is not satisfactorily seen except with a Coddington lens or other magnifier. With this the lesion, which, in my experience, is never multiple at first, reveals itself as I have mentioned. The line varies in length from one to four millimeters and almost fulfills the geometrical definition of a line in having no dimension but length. "Hair line" is, I think, sufficiently explanatory. The loupe shows the base of this line, as well as of the subsequent ulcer, to be composed of numerous white points so small that two or three are accommodated in the width of the line and the corneal substance between them is hazy. This same appearance is seen in other corneal infiltrations, and I have especially noticed it lately in a case of sclero-keratitis. The lesion persists for two or three days without appreciable change except in length and in the rupture of the epithelium over the infiltration. Generally at the end of this time branches begin to form, either by sprouting off from the main one, or by little points forming and extending to the original branch. The appearance then is of a broadening, shallow trough, usually branched, with base of varying gray, the cornea never becoming otherwise disturbed and no vascularity ever appearing. The little trough becomes filled with the detritus as it is cast off, the collection usually projecting beyond the surface of the cornea. At this time, generally the end of the first week, the lesion is quite conspicuous. Healing takes place slowly by filling in of the ulcer and cicatrization. While the process never extends deep, rarely causes hypopyon or iritis, and never perforates, a faint opacity remains, marking the sight of the lesion and causing a visual disturbance only if situated near the corneal center. I wish to compare this description with that of Hansen-Grut and then of Kipp.

Hansen-Grut describes it as "a superficial ulceration with a chronic course and a tendency to become serpiginous. The ulceration continues to propagate itself by means of buds or excrescence so that the line of demarcation of the ulceration, which remains very superficial during the whole course, becomes very irregular. The surrounding parts remain very clear and the cornea does not become vascular. This affection must not be mistaken for vesicular keratitis. It is no way connected with frontal herpes, nor with herpes accompanying bronchial catarrh or pneumonia, the form so well described by Horner. There is no question of vesicles, and in no case was there any previous disease that could have occasioned an herpetic eruption."

Kipp says "its onset was nearly always attended by photophobia, lachrymation, and the feeling as if a foreign body were under the upper lid and rubbing against the eyeball. Sometimes a severe supraorbital neuralgia ushered in the eye disease. In a few cases little or no irritation was present during the whole course of the keratitis. The eyelids were rarely red and swollen, and the palpebral conjunctiva was in only a few cases much injected and swollen. There was always more or less circumcorneal injection. If the eye was examined a few hours after the appearance of the signs of irritation, there was found in some part of the cornea, usually not far from its margin, a number of small grayish opaque elevations arranged in a line like a string of beads. On the following day these elevations had disappeared, and in their place was found a narrow furrow with a hazy floor and grayish ragged edges. At the same times, or perhaps not until some days later, one or several short grayish, perhaps slightly raised buds were seen to shoot from one or both sides of the original furrow into the healthy cornea. If examined with a loupe these offshoots were also seen to be made up of a line of minute grayish dots placed closely side by side. In the course of a day or two these offshoots were also changed into shallow furrows. Unless arrested at this stage by treatment, the main furrow and the branches continued to grow gradually in length without, however, increasing much in depth or width. The epithelium between the branches, especially if they were placed close together, was, however, often destroyed. In some cases several furrows were developed simultaneously in the cornea. The length attained by the furrows varied greatly; sometimes they measured only a few millimeters when the disease was arrested, while in other cases they extended across the entire cornea at the time the cases were under observation. They usually followed a crooked zigzag course. The furrow always remained quite shallow, and probably seldom penetrated Bowman's layer. The width of the main furrow rarely exceeded one millimeter. The floor and the edges of the main furrow and the branches remained of the bluish gray throughout the course of the disease in the cases which were properly treated from the beginning; but in some cases in which poultices of bread and milk had been applied, the floor and edges had assumed a yellowish color, and in two of these cases a hypopyon was observed. Perforation of the cornea did not occur in any case. Iritis was observed only in the cases with hypopyon, and was only slight in degree. Severe pain in and around the eye was present in nearly all of the severer cases, and usually continued until the progress of the ulceration was arrested. The sensibility of the cornea was frequently somewhat reduced in the vicinity of the ulceration, but in other parts it was unimpaired. The tension of the eye remained normal throughout the course of the disease."

Exceptions to this course are seen. In the few cases when the primary lesion is a small rounded area of infiltration, the loupe resolves this into fifteen or twenty white points, with hazy cornea between them. I believe I have seen only one case in which the process remained at this stage. Again, the corneal epithelium remains intact, when healing is more rapid and the resulting opacity less noticeable. I may say that when the epithelium is broken, fluorescin by no means always stains the exposed tissue, a fact of which I have no explanation to offer. While the process may spread over the whole cornea, it usually remains confined to a single quadrant.

As regards the form of malarial organism found in the blood of these cases, I have said that the intermittent (tertian or quartan) are most common. The estivo-autumnal also occurs, all indeed except the crescents, which I am informed are not found in the blood of patients who contract malaria in the vicinity of Memphis. Another curious fact of which there is no good explanation.

I might add that I have found no organism in the material scraped from the furrow. Emmert alone claims to have done so.

The affection was invariably limited to one eye in my cases. I have not seen the second eye ever affected.

From what has been said it follows that the prognosis is good. A central opacity or irregular astigmatism, with a consequent reduction of vision, is the most unfavorable result I have seen.

The duration is variable. I have seldom, if ever, seen recovery in less than ten days, and I have seen the condition persist several weeks. Relapses are not rare and are usually due to the same exciting cause as the original attack. Some patients have told me that every "fever" they have "settles in their eyes."

The first therapeutic indication is to arrest the malarial paroxysms, if they exist, with quinine, suitably administered. Following this, or alone if a chronic form of malaria exists, a tonic with Fowler's solution is indicated. Locally the treatment ordinarily used for other forms of corneal ulcer has been found very effective. A mild antiseptic wash, atropia combined with a soluble salt of quinine, yellow oxide of mercury ointment, and a shade to protect the eye from light, are usually all that is needed. If the ulcers are very sluggish, delicate penciling with carbolic acid, or preferably nitrate of silver, may be resorted to. The curette, carbolic acid, and the actual cautery are sometimes needed when the ulcer becomes infected or tends to spread excessively, but this is not very often. I append the history of the cases in which a blood examination has been made, and in this connection I wish to express my appreciation to my colleagues, Drs. Wm. Krauss and M. Goltman, for the thorough and careful manner in which they have carried out this part of the work. As they both have a skill in hematology which I despair of acquiring, the accuracy of the observation as far as the blood is concerned would have been sadly deficient but for their kind and valuable assistance.

Case 1. August 19th, W. A. B., male, white, aged 30, had been in bed with a malarial attack on the 15th and 16th (one paroxysm) and on the 17th the right eye became sore. The cornea showed a crescentric narrow ulcer toward the inner border with a convexity toward the center. He was given atropia. In a week the lesion was broader, but quite shallow, and the subjective symptoms were better. On September 2d all inflammatory signs had disappeared. The vision in the right eye was defective (15/80) on account of a chorioidal and optic atrophy, the ultimate result in the left eye being 15/60. I might say that thiosinamine was given this man, and produced a return of the inflammatory symptoms in the left eye.

Blood Examination: A very few tertian organisms, some phantom cells eosinophiles, hemoglobinemia, some microcytes, in fact all the evidences of convalescence from tertian malaria.

Case 2. August 29th, C. M., male, mulatto, aged 29. Two weeks before had had "chills and fever," and during the attack the right eye became inflamed and remains so. The cornea showed a fine white raised line diagonally across the upper half. The ball was injected and there was moderate photophobia and pain. He was given atropia and Fowler's solution and promptly recovered.

Blood Examination: Several hyaline intra-cellular parasites and a few coarsely pigmented bodies. The case is one of estivo-autumnal or mixed infection. No typical tertian organisms.

On December 1st, without apparent cause, the same eye became inflamed. A faint scar of the former ulceration remains, and down and along and parallel to the corneal border two denuded lines are seen, the lower and larger one being quite markedly infiltrated.

Healing was again prompt. On January 23d the eyes presented faint opacities where the ulcerations had existed.

CASE 3. September 26th, Miss B., white, aged 19, has had chills all summer, ten in all, the last one thirteen days before I saw her. The left eye had been sore two days; the vision in it had never been perfect. A little up and out from the corneal center was centrally grooved, grayish area, 2 mm. long. There was some bulbar congestion and photophobia, and the iris was a little off color. The little ulcer did not stain with fluorescin. She was given atropia and Fowler's solution, and a couple of days later yellow oxide of mercury. The ulcer filled in from above downward, and she was dismissed on October 1st. Vision O. S. 15/80.

Blood Examination: Blood spread showed very few parasites. Quartan infection.

CASE 4. October 10th, Mrs. T. M., aged 30, white. Eleven days before coming to me she had had a chill, followed by five others on alternate days. The right eye had been sore six days, and at the same time the right eye became inflamed herpes appeared on the face and was fading when I saw her. The ball was injected and there was some pain and photophobia. The cornea presented a lesion in the upper and outer quadrant, which the loupe resolved into a delicate branching line. She was just leaving the city on account of her malarial infection, which had resisted quinine, and I only saw her once. She was given an atropia solution.

Blood Examination: Marked hemoglobinemia; extra and intra-corpuscular hyaline bodies, and coarsely pigmented intra-corpuscular parasites. Several nucleated cells (normoblasts).

CASE 5. October 20th, H. R., male, white, aged 50. The first attack of malaria in any form that he ever had was an intermittent three weeks before I saw him. One week after the first (and only) paroxysm the right eye became inflamed. On examination the ball was found injected and the cornea showed typical dendritic keratitis with a large T-shaped lesion at the center of the cornea. He was put on atropia October 30th, much better November 3d. The lower branch had filled up, and a yellow oxide of mercury ointment was given November 16th. Slow progress, especially up and out. The ulcer was curetted and a bandage applied.

Blood Examination: A rather severe grade of hemoglobinemia, some corpuscles exhibiting only a faint ring, the body being absolutely colorless. Hypo-leucocytosis and numerous hyaline and pigmented tertian organisms. The pigment was fine, reddish brown and very active.

Case 6. November 19th, J. H., male, white, aged 50, had had a chill eight days before and another the day before I saw him. The right eye was inflamed before the first chill, and exhibited a clean crescentic trough, below and parallel to the limbus. With a Coddington lens the base could be seen to be composed of fine white points, with hazy corneal tissue between. He was given atropia, yellow oxide ointment and Fowler's solution. November 29th, a chill. The little ulcer making no progress, it was touched with carbolic acid. The patient was then lost sight of.

Blood Examination: Corpuscles very pale, numerous large and small hyaline and pigmented hematozoa. Some corpuscles contain two or three parasites. Tertian infection. Regenerative changes, marked.

Case 7. November 19th, Mrs. J. B., white, aged 31, had been having chills all summer, the last one on October 20th, and the next day the right eye became inflamed. It showed a sub-epithelial infiltrate a little out from the center, 1 mm. in diameter. The epithelium was intact, and probably regenerated. The loupe showed its base to be finely dotted as in the other cases. There was moderate injection and photophobia. Under atropia and Fowler's solution she proceeded to get slowly well.

Blood Examination: Corpuscles pale, a few small coarse pigmented parasites, estivo-autumnal infection. Little or no regenerative changes.

Case 8. November 29th, J. B., male, white, aged 40, in 1873 following a fever, probably malarial, the left eye became sore and remained so for two or three months. In 1878, after yellow fever, the same thing occurred. Last week he had an attack of tertian malaria, and for two days before I saw him the left eye was again inflamed. These three are the only febrile attacks he has ever had. The cornea showed a linear raised and infiltrated lesion in the upper temporal quadrant. The ball was injected, iris hyperemic. He was taking an antiperiodic tonic from his physician, Dr. S. C. Sims. He was given atropia, calomel insufflations and a pressure bandage. On December 2d I curetted the tract under holocaine anæsthesia. The iritic congestion passing to iritis, he was leeched and atropia instilled afterward, with the result that a synechia which had formed yielded, and the eye slowly whitened. I dismissed him the middle of January with an opacity at the side of the ulcer and others more central, from the former attacks. Vision, 15/cc.

Blood Examination: The notes of the examination have been mislaid, but there were evidences of malarial infection. I would suggest that the attack in 1878 might have been of this character, since all acute febrile attacks then were called yellow fever, a physician often not seeing the patient.

CASE 9. December 7th, Mrs. L., white, aged 47, had a chill in September, followed by six hours of fever, and the left eye at once became sore, and remains so. There was considerable photophobia, which was the principal complaint. There was a small central three-pronged corneal ulcer with an infiltrated base. She was given atropia, Fowler's solution, yellow oxide ointment, and told to bathe eyes frequently in hot water. On December 18th she wrote that the eye was still a little sensitive to light and that she had herpes labialis. I received no further report.

Blood Examination: Many pigmented aud unpigmented organisms. From the distribution of the pigment, the infection would seem to be estivo-autumnal, but from the size and shape of the parasites and the condition of the corpuscles, it looks like a tertian infection. It may be both. There is a good color index, with only very slight hemoglobinemia. Slight regenerative signs.

CASE 10. January 14th, C. O. B., male, white, aged 50, had been having chills and fever for two weeks, the last attack twelve days before I saw him. The right eye had been sore nine days. A beautiful delicate raised line of infiltration curved up within and parallel to the limbus of the lower and inner quadrant, tipped with a little coronet of three prongs. He was given atropia and later, yellow oxide ointment.

A small round area developed at the lower extremity of the infiltrated line and another in the center. At these three points the epithelium was cast off, but remained intact elsewhere. The line slowly faded, the points persisting as little hazy areas for two weeks. There was considerable bulbar injection in this case.

Blood Examination: Spread very poor and stains badly. Anemia marked, no hemoglobinemia, slight lymphocytosis, some doubtful pigmented bodies that might be tertian organisms; while it is doubtful, it looks very much like malarial blood.

Continental Building.

OPTICIANS RESPONSIBLE FOR INJURIES TO HEALTH FROM GLASSES THEY PRESCRIBE.—Simon Fleischmann of Buffalo, N. Y., chairman of the supervisors' committee on laws and legislation, has won his suit against Alexander Martin, optician, of Philadelphia and Buffalo. Justice Braunlein decided in his favor, and awarded him $54.44 damages, the full amount asked for.—*Chicago Medical Recorder.*

"FURTHER OBSERVATIONS CONCERNING THE CHECK LIGAMENT."*

J. ELLIOTT COLBURN, M.D.,

Professor Ophthalmology Chicago Policlinic.

Illustrated.

In the OPHTHALMIC RECORD, January, 1897, I made a report of observations on the living subject and cadaver, and called attention to the part played by the check ligament in regulating the action in the eye muscles and limiting the range of rotation of the globe. In this report I also cited cases in which had been used the results of my observations. I desire now to supplement the observations made at that time and report some new cases with additional data which I hope will interest and call out discussion. I make no claim to originality of observation. The importance of these connective tissue bands was suggested to me by dissections made some years ago, and it is only within the past two months that the work of Mortais and the comments of Maddox have come to my notice.

The following cases I used as experimental studies with the full consent and approval of the patients:

Experimental Case 1. Mr. T., aged 28 years, had suffered from convergent squint from early childhood. He habitually posed his head to the right or left according to the eye used in fixation. The vision with +1.50 sph., =20/30 each eye. With the head held stationary and objective point in median line at one meter from the forehead, the eyes made futile attempts at alternating fixation: forced right or left abduction brought eyes to the median line. After cocaine anæsthesia, attempts were made to produce instrumental abduction with scarcely better results than before. Believing this to be due to check ligament interference I made a free incision of the check ligament, using forcing stitches as per Plate III to exaggerate the result. The eyes were operated separately at an interval of two weeks with the result of free abduction and diplopia with images ten prism degrees apart. This error was gradually corrected with prism exercise, and the diplopia disappeared. The muscles in this case were not interfered with.

Experimental Case 2. Mr. H., aged 32 years, congenital squint, with

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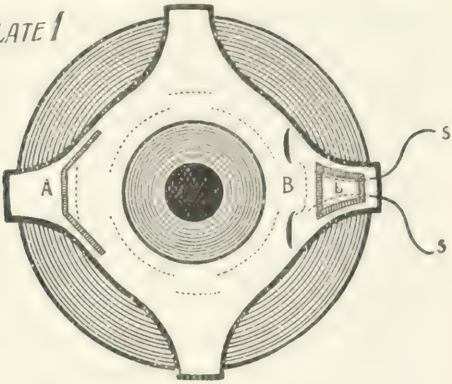
*Read before the Western Ophthalmologic and Oto-laryngologic Association, February, 1899.

PLATE I



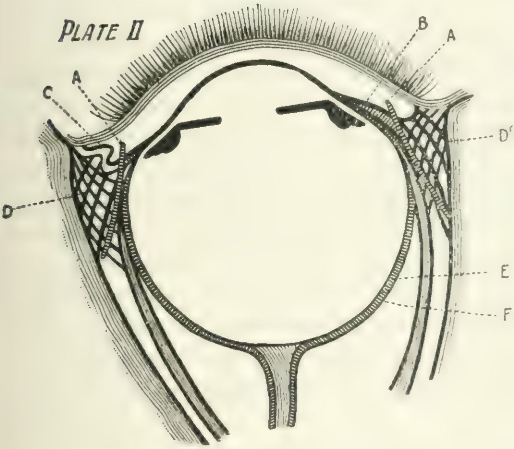
A. Line of incision in graduate tenotomy.

B. Advancement of tendon.

b. Excised portion of tendon.

S S. Sutures.

PLATE II



A. A. Lines of incision.

B. Conjunctiva.

C. Plica Semilunaris.

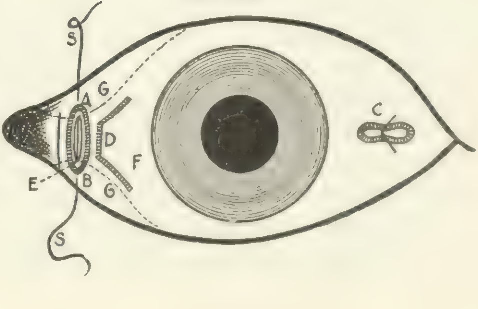
D. Internal Check Ligament.

Dd. External check ligament.

E. Space.

F. Tenon's Capsule.

PLATE III



A. } Incision through conjunctiva and
B. } check ligament.

C. Result of bringing A and B together with a suture.

D. Lines of cut in tendon.

E. Check ligament.

F. Conjunctiva.

G. Expansion of tendon, internal rectus.

S S. Sutures.

imperfect development of left side of face and head. The left eye was placed fully 10 mm. lower than its fellow and much nearer the nose, giving him the appearance of having a high degree of esotropia. The actual measurement gave right hyperphoria 20°, and 60° esotropia. Fixation was accomplished by posing the head forward and to the left, the right eye being used.

Vision, right eye with +2 D. sph.○+1 D. cyl. axis 90°,=20/20.

Vision, left eye with +2 D. sph.○+3 cyl. axis 90°,=20/40. With head fixed, abduction right eye gave 10° to the temporal side of the median line.

Operations: Right eye—free incision of check ligament as in Plate II and forcing stitches, as in Plate III, gave increased abduction, but was not satisfactory. The internal rectus tendon was then pierced and a hook used to search for adventitious bands extending between the capsule, the tendon, and the ocular wall. One was found and severed, allowing of great increase of abduction. The superior rectus was then exposed and its check ligaments freely incised. The tendon itself, however, was not interfered with. The result of these operations was an abduction of 40 geom. degrees, and an increased subduction of 108. Four weeks later the left eye was operated upon, check ligaments of the internal rectus being operated upon. Here again the muscles were not interfered with. The result of this was an abduction of 30 geom. degrees, and a circumduction of 20 geom. degrees. A diplopia followed these operations with images separated by 15 prism degrees. Three months later the fusion of images was quite constant and the head in normal position. The range of abduction and adduction was slowly becoming more nearly normal. Today he has normal binocular vision with but slight manifest hyperesophoria.

Experimental Case 3. Mr. W., aged 23 years, teacher. In early infancy the right eye was noticed strongly convergent and turned somewhat above the normal. As the patient expressed it, "that eye was always turned up into his head." When he presented himself to me for examination the left eye had full normal rotation, vision =20/20; right eye strongly convergent with limited movement. Attempts at abduction resulted in slight suberduction. Forced abduction under cocaine showed eye to be limited to about 30° abduction, and at no time was I able to bring it to the median line. The refraction of the eye, +3 D.; the vision with this correction, 10/200. The procedure in this case was, first, to penetrate the conjunctiva over the internal rectus muscle, grasp the muscle and dissect it away from the ocular attachment, displacing the capsule of tenon as little as possible. The eye was more movable than before, but on account of the conjuntiva never having been free, the eye could only be rotated to the median line. I then introduced Stevens' barbed hook, drew the muscle forward and reattached it as nearly as possible to its old attachment. The next step was to introduce a long blade Stevens' scissor and freely sever the check ligament; I could then rotate the eye outward 30° beyond the median line. I reinforced the stitches holding the tendon to the globe, increased the size of the conjunctival aperture, approximated the angles of the conjunctival wound, thus increasing the length of the conjunctival and subconjunctival tissues from the sclero-corneal junction to the canthus. In order to insure and maintain forced abduction I introduced a silk suture into the conjunctiva to the temporal side of the cornea and fixed it with an adhesive strap to the temple. The eye made a good recovery. As soon as the recti muscles regained their control of the movements of the globe a good coordination followed. I then freed the check ligaments of the opposite eye, and two weeks later the patient returned improved. A recent letter informs me that the eyes are apparently normal in position, and that the acuity of vision is greatly increased in the right eye. This is a case of monocular squint with contracted check ligament, corrected by first freeing the muscle of adventitious heads, then freely severing the check ligament and using a forcing stitch to increase the length of the free conjunctiva from the globe to the corneal margin. The only object in making a tenotomy was to first see if the section would free the eye. In a later case the result was obtained by searching for connective tissue bands between the muscle and the globe with a strabismus hook and without severing the tendon. In the four additional cases this method was successful.

These studies were made with the hope of finding out, if possible, how much can be accomplished in selected cases by simple freeing of the check ligaments, and has resulted in a material modification of all of my operations on the recti muscles. The cases selected for operation are those in which the voluntary movements of the eyes are limited, and the use of the fixation forceps, the eyes under cocaine anæsthesia, also meets with sufficient resistance to prevent free forcible rotation.

The application of conclusions arrived at from these and other studies to the treatment of heterotropia has resulted in:

1st. Insisting upon the elimination of errors of refraction and accommodation, allowing, sometimes, weeks and months to elapse before resorting to operative treatment. To do this careful measurement records must be made at intervals in order to note the variations of the deflections of the eyes.

2d. It is necessary to note the range of abduction and adduction, and, in fact, all the movements of the eyes. For this purpose, I have used the perimeter and the reflected card as the most convenient gauge for the measurement of the maximum field of rotation. To illustrate:

Master T., aged 13 years, convergent squint. Left eye=60°; maximum adduction=15° each eye. Had error of refraction, hypermetropia 2D. Atropine was used and a full correction given. Mydriatic was continued for six weeks. At the end of that time, convergence=45°; maximum abduction, left eye, 25°; right eye, 20°. There was no variation from my former record at the end of the eighth week, when I made a free incision of the check ligament of the internal rectus. The immediate result of the operation was not notably successful, but on the fourth day the patient complained, for the first time, of diplopia, and at the end of four weeks there was normal free abduction and adduction with a manifest esotropia of 10°. The diplopia gradually disappeared and the eyes were apparently straight.

There is another point which has engaged my attention in cases of both heterotropia and heterophoria, and that is the angle at which the base of the orbital cavity is placed in relation to the plane of the median line of the face.

The myope usually has a thin, narrow face, sharply receding from the median line. The external canthus is much further back than in the emmetrope, and the base of the orbit is placed at a much wider angle. The check ligament of the internal rectus is attached much further forward than the check ligament of the external rectus. The internal rectus draws directly against its check ligament, while the external rectus has no such restraining influence. Myopes are prone to have exotropia or exophoria. On the other hand, you will observe that the external canthus of the hypermetrope is nearly on a line with the internal canthus, and the plane of the base of the orbit is the same, or on a very acute angle to the plane of the face, and the external rectus has the same difficulties to overcome as the internal rectus of the myopic face, and they are prone to the opposite conditions. It can hardly be doubted, I think, but that these static structures must have some influence in producing muscle anomalies.

The influence of the check ligament upon the muscles producing heterophoria has been but little considered. Yet I believe it has an important part in many cases and may to some degree explain the diversity of opinion regarding the merits and demerits of the various operations and procedures for the relief of these anomolies. I merely mention this as offering an explanation for the difference in practice and difference in results obtained by operators. The researches of the French anatomist and physiologist, Mortais, suggests an entirely new field for study.

I have not observed a sufficient number of cases, as yet, to make my statistics of any value, and merely offer this to you, hoping that some among you will have interest enough in the matter to continue the study.

A CLINICAL REPORT—EMBOLISM OF LOWER BRANCH OF CENTRAL RETINAL ARTERY—PSEUDO-GLIOMA—PARALYSIS OF THIRD NERVE.*

BY WARWICK M. COWGILL, PH. B., M. D.

PADUCAH, KY.

CASE I. *Embolism of a Branch of the Central Retinal Artery.*—Mr. M. E. C., aet 35 years, came to me on July 24th, 1897. His statement was as follows: About thirty-six hours previous he first noticed peculiar vision in his left eye. It came on suddenly and appeared as if a drop of water or mucus was hanging from his upper lid, obscuring his vision when he looked up. He made repeated efforts to wipe the offending body away. There was no pain. His previous health had been good. Had never had any serious illness and was at this time in good health. Examination of the eye showed a slight blanching of the lower half of the optic disc, with a diminution in the caliber of the lower branch of the central retinal artery. The fundus otherwise presented a normal appearance. Examination of the field of vision with the perimeter showed blindness of the upper field coming almost down to a line drawn horizontally through the center of fixation. $V = \frac{15}{200}$. This vision is eccentric, as he is obliged to fix slightly above the object he wishes to see. The treatment in embolism of the retinal artery, or of its branches, is directed to those measures that may induce the embolus to travel further on in the artery, thereby reaching a position in which the least amount of damage will ensue by reason of the lost blood supply; that is, get the embolus as near the terminus of the artery as possible. In the very earliest moments after the occlusion has occurred, and before firm agglutination has taken place, efforts in this line may be successful. To accomplish this object the two main measures are (first) dilatation of the arteries by means of inhalation of amyl nitrite, and (second) lessen the intra-ocular pressure by paracentesis, thence by comparatively increasing the vis-a-tergo. These measures have proven successful occasionally when used in the very earliest stages, but after twenty-four or thirty-six hours little or nothing can be expected from them. The treatments I used in this case were massage and galvanism. This was continued daily for a month with no perceptible change in the eye. A recent examination (May 11, 1898) of the eye shows an unchanged condition in the amount and field of vision. The optic disc is much whiter than when first seen, and the artery remains bloodless. Arterial embolism is a sequence of endocarditis or endarteritis. So in these cases we look for some heart lesion or a history of rheumatism. In this case there was no history of rheumatism nor any heart lesion that I could make out.

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* Read before the annual meeting of the Southwestern Kentucky Medical Association. May, '98.

CASE 2. *Pseudo-Glioma*—John McG., aged two years, seen with Dr. Reddick. Two months before my seeing him he had meningitis. After recovery from the meningeal trouble the left eye became inflamed, but recovered. Then the right eye became affected. On examination I found the right eye much inflamed; extensive adhesions of the iris to the lens capsule; eyeball soft, T-2; and exquisitely tender on palpation. There was a yellow reflex from the fundus, apparently coming from just behind the lens. The eye was absolutely blind. I advised enucleation, which, with the assistance of Dr. Reddick, I did. From this the boy made an uneventfully recovery. On opening the enucleated eye-ball the globe was found filled with a purulent, copper-colored fluid; the retina was totally detached and lying in a mass behind the lens. It was this mass of detached retina that caused the yellowish reflex. The eye trouble in this case, I think, was a sequence of the meningitis, and due to septic metastatic infection.

I wish to add further, in this case, that shortly after the boy recovered from the enucleation he had measles. When he recovered from the measles his mother found he was totally deaf, which was confirmed by an examination. The question arises, was the deafness caused by the meningitis or the measles? We know that deafness is not an unusual sequence of either of these two diseases.

FOUR CASES OF PARALYSIS INVOLVING THE THIRD NERVE.

Paralysis of the third nerve is neither very frequent nor very infrequent. These four cases have occurred in my practice in the past two months; and as each presents a different phase, I thought they might prove interesting.

Case 1. *Complete Paralysis of the Third Nerve Supplying the Left Eye.*—Ray R——, aet 11. Brought to me by Dr. Alcock, of this country. Trouble about the eye was first noticed some ten days before I saw him. The boy had had no sickness, except some mild malarial trouble. There was complete ptosis; slight protrusion (proptosis); marked divergence; and except a slight rotary motion given to the eye by the superior oblique, the ball was totally immobile. The pupil was unduly dilated and did not respond to either light or accommodation, with complete paralysis of the ciliary muscle. The fundus appeared normal; $V = \frac{15}{40}$ (the right eye normal). There was slight pain in the orbit on pressure. There was pressure on the third nerve, but its location and character we could not determine. There was no specific history. However, we decided to put the boy on small doses of potass. iodide, but this upset his stomach and was discontinued after a few days. Three weeks after I saw the case Dr. Alcock reported that a week after the boy was to see me the pupil of the right eye became dilated and remained so for five or six days. None of the muscles of the right eye were paralyzed. He still complained of pain in the orbits. But at that time (three weeks after I first saw him) both pupils were normal and movement of the left eye almost normal, with still some diplopia. Other nerves became affected, notably those of his arms. These changes show that the pressure was shifting. This boy died about two months after I first saw him. I think he had a basal meningitis. Could it have been tubercular?

Case 2. Cora McC., negro, aged 21, paralysis, third nerve affecting right eye, ptosis and slight protrusion with very marked divergence right eye. The ball could not be moved up or down, but could be converged to the median line; pupil semi-dilated and fixed, accommodation entirely paralyzed. This condition had existed for several days. There were large ulcerated patches on both tonsils. This case was clearly of syphilitic origin. I prescribed mercury by inunction. Result unknown, as I did not see the patient again.

Case 3. Calvin B., negro, aged 22. Both pupils widely dilated with complete paralysis of accommodation, right and left. In this case the ocular muscles were not affected. The patient acknowledged having contracted syphilis one year ago. I prescribed mercurial inunction. Patient disappeared. Result unknown.

Case 4. Mrs. E. D. W., white, aged 29 years. Paralysis ciliary muscle and iris left eye (right eye normal), of two weeks' standing; came on suddenly. Personal surroundings and history of buccal ulceration, with skin eruptions, confirm the syphilitic origin of this case. Treatment—

Anti-syphilitic and galvanism to the eye daily. I saw her only four or five times, during which time there was some improvement in her condition. Result unknown.

To sum up these four latter cases. In the first case there was total paralysis of the third nerve going through the eye affected. Cause known.

In case two there was almost a total paralysis (the internal rectus had a little contractile power) of the third nerve to the eye affected. Cause syphilis.

In case three there was paralysis of the branches of the third nerve, contracting the iris and ciliary muscle in both eyes. Cause syphilis.

In case four paralysis of those branches going to the iris and ciliary muscle in one eye only. Cause syphilis.

INEQUALITY OF THE PUPILS.—An article in *Médicine Scientifique* states that the pupils are not rarely unequal in healthy persons, evidently a congenital peculiarity. In these cases the right pupil is more frequently dilated than the left. In cases of cancer of the stomach the left pupil will be found dilated more than the right. In hypermetropic cirrhosis, the right pupil is more dilated than the left. In pleurisy the pupil on the side affected is dilated.—*Crónica Méd. Méx.*, February 1st.

SUBLIMATE IN INFECTIVE IRIDOCHOROIDITIS.—Addario states that subconjunctival injections of sublimate have very little effect upon chronic infective iridochoroiditis, while they rapidly cure the acute form. Inflammatory products with a tendency to organization fail to disappear with the sublimate treatment. It may prove effective in the premonitory symptoms of sympathetic ophthalmia, due to infective choroiditis, but once established it is a long and difficult task to influence it.—*Rev. Gen. d'Oph.*, December 31, 1898.

NERVOUS BLINDNESS.—J. Ramos relates a number of interesting cases of sudden, absolute blindness appearing in nervous subjects after severe emotion, and gradually passing away in a few days or weeks. Another case was a healthy, serene young woman, entirely free from nervous or hysteric antecedents, suddenly affected with blindness while calmly sewing in her room. His favorable prognosis was confirmed by the gradual recovery of sight in a fortnight. No disturbances could be noted in either eye, in any case.—*Gaceta Médica*, Mexico, January 1st.

NOTE ON THE NORMAL OPACITIES OF THE CORNEA.*

BY H. GIFFORD, M.D.

OMAHA, NEB.

For several years I have been demonstrating to my assistants and friends what I have called the normal opacities of the cornea. Everyone who has examined the cornea with a brilliant oblique illumination has doubtless observed a delicate haziness, but that this haze can be resolved upon higher magnification into distinct minute opacities, is not, so far as I am aware, commonly known. The first reference to it which I have heard of is this paper of Dr. Gradle's. He refers to those opacities as occurring in various pathological conditions, and also intimates that something of the kind occurs, at times at least, in normal eyes. What I wish to insist on is that they can *always* be seen where the iris is dark colored or not excessively small, if one has a good lens and pays sufficient attention to the illumination. The simple lenses ordinarily used for examining the cornea do not magnify enough to make the observation of the opacities easy, but it is not necessary, on the other hand, to have one of the more complex corneal microscopes. A compound Coddington or Hartnack lens reveals them well if the illumination be sufficient. This, as Dr. Gradle insists, should be intense. The image of the source of light must be focused accurately upon the upper layers of the cornea. Under these conditions the normal corneal haze is seen to consist of innumerable discrete opacities, more or less irregular in shape, with rather indistinct but on the whole somewhat curved borders. In the neighborhood of any ulcer, foreign body or other source of irritation in the cornea there is a great increase in the size and density of these opacities. They represent, I think, the so-called corneal corpuscles or lymph spaces of the cornea, and the changes which occur in them under the influence of irritation are probably due to a rapid proliferation of the cells lining these spaces, and, in later stages, perhaps, to the migration into them of true leucocytes. Although I have called these the normal opacities of the cornea, I have done this, to a certain extent, to avoid circumlocution, since in the normal cornea they cannot be seen by directly transmitted light, and they probably offer no obstacle to the clearest possible vision. We see them by oblique illumination on account of the difference between the refractive index of the contents of the lymph spaces and that of the surrounding corneal tissue, somewhat as we often see the stellate figure in a perfectly clear lens.

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*Remarks (with slight additions) made in the discussion of Dr. Gradle's paper at the '98 meeting of the American Medical Association. See Journal A. M. A., XXXI, 13, p. 701.

Treatment of Corneal Opacity.—Corneal opacity is first a round-celled infiltration, with later spindle-celled and fibrous transformation. The more advanced the fibrous transformation and the fibrous tissue incorporated as a fixed constituent of the substance of the cornea the less favorable the prospects of cure, consequently the necessity of early treatment. The healing process can only be a reabsorption and reorganization, and all medical treatment is futile. The only means of hastening and promoting the process is massage of the bulbus and of the region surrounding the eye. Vèhmeyer massages through the closed lid, for fifteen minutes, two or three times a day, until there is a sensation of "burning heat," with a bandage over the eye afterward to enhance the effect of the massage.—*Munich Med. Woch.*, Dec. 20, 1898.

Tropacocain for the Eye.—Rogmann concludes a review of the various local anesthetics used in ophthalmology, by expressing his preference for tropacocain (Giesel and Leibermann, 1891). The anesthesia is more complete than with others, more rapid in its appearance and more permanent than with cocain. It affects even inflamed tissues. Mydriasis is rare and slight. It has antiseptic properties, and the solution keeps a long while and is much less toxic than cocain. He uses a three per cent solution with marine salt, 6 per 1000, which deprives it of all irritating properties. The anesthesia is so prompt that for the extraction of a foreign body the cornea can be scratched almost immediately after the instillation of a single drop. Two drops in the conjunctiva opposite each muscle are sufficient for a strabismus operation. In some cases the consecutive painful reaction seems more pronounced than after other anesthesia.—*Belg. Med.* 1897.

Chavas cited a case in Gazeta Med. of a medical man suffering from undoubted epilepsy. He had a high degree of hypermetropic astigmatism and convergent strabismus. Correction of his refraction and tenotomies of both interior recti instantly relieved the epilepsy.

CORRESPONDENCE.

Denver, Colo., February 20, 1899.

Editor Ophthalmic Record: Dear Sir—I must take exception to a "News Item" appearing in the Record wherein you refer to an article of mine which appeared in the *Colorado Medical Journal* as "*openly advocating* the paying of commissions from specialists to family physicians for patients sent from the latter to the former." I enclose the article you refer to that you may read it. I feel sure that you have not read it, or you would not make the above statement. This paper of mine referred to has been very generally criticised, mostly by men who have not read the original article published by me, but have depended upon some criticism, the latter having served as an incentive to write something on the growing evil of paying commissions. The point I made in my paper was entirely overlooked, or was of no importance to the majority of my critics, *that compensation from the specialist to the general practitioner is only justified when the physician has expended time and energy in getting his patient to go to a specialist or has prescribed for his patient a few times before he can get him to go, and for which he would not think of sending in a bill for fear of giving offense.* I do not object to criticism directed to the theme of my paper. I do object to the paper being made the scapegoat for editorial comments on the abuse of commission giving, wherein I am referred to as advocating paying commissions. I feel that a perusal of my paper will convince you that I advocate nothing of the kind; on the other hand I believe you will find that there is not a line in the paper that does not oppose paying commissions.

I should be very glad if you would give this letter, as well as the enclosed paper, publicity in the Record, that my position may be more fully known. The majority of my friends, no doubt, have read only such criticisms as referred to, and are ignorant of the actual contents of the original article. Very truly yours,

Melville Black.

SHOULD THE GENERAL PRACTITIONER RECEIVE A FEE FOR REFERRING CASES TO THE SPECIALIST?

BY MELVILLE BLACK, M.D.

DENVER, COLO.

It may seem to a certain few that such a subject should be left out of print. I do not consider it a delicate question, nor one that is best discussed *sub rosa*. I believe that in a certain number of cases the physician should receive a fee for referring cases to the specialist.

The general practitioner is called upon to render every kind of medical and surgical service. If he sees fit to send certain cases to a specialist he displays magnanimity unparalleled in other fields of labor. We will admit that in many instances his training and equipment are inadequate in some of the departments now presided over by specialists. The advancement of medicine and surgery has made it difficult for any one man to keep abreast of the entire field. He frequently recognizes that his knowledge in some one department is deficient. He is honest and tells the patient so. The patient is sent to a specialist. There are many instances where the practitioner has found it advisable to administer to his patient for several days before it is possible to refer him to a specialist. Again, in his anxiety for the welfare of his patient he may make several visits in the endeavor to cause the latter to consult the specialist, or may lose valuable time in going with him to the specialist. In any event he expends a certain amount of his time for which the patient will not compensate him. The patient and his family have long looked upon him as their friend and medical adviser. They never think of paying him for aught except actual professional services. They would not consider such services professional and he would gain their displeasure if he were to present his bill for the same. In case he has treated the patient for a few days he would better erase any and all such charges for professional services from his books, because the patient considers that he has received no benefit from this treatment; that his physician did not understand his case or he would not have sent him to some one else. Therefore if this bill is presented no attention is paid to it, and if payment is pressed, the next time a physician is needed someone else is called in. Now who is to compensate this physician? There is but one answer—the specialist. If the specialist does not pay him for the time he has expended no one else does. The specialist can easily learn from the patient the extent of the services rendered by his physician. The latter should then be compensated accordingly.

There are many times when the family physician is asked to recommend a specialist. He is not called upon for services nor does he find it necessary to see that the patient goes where directed. He is not inconvenienced nor does he spend any of his time upon the case. Here it is not incumbent upon the specialist to pay the practitioner for his kindness.

Many an obscure practitioner gains standing and even prominence through the specialist. Specialists to whom he refers cases make it a point to speak well of him whenever the opportunity is afforded. *This is the only honorable way in which the specialist can return many favors and acts of kindness shown him by the general practitioner.*

We all make mistakes, even the general practitioner. What he has done for a given case may not meet with our approval. A hasty word or a sign of disapproval may ruin the reputation of this physician in the eyes of the patient. Hence many cases are not referred because of some such former experience. Again the time expended on a case has been considerable, to say nothing of the mental worry. To refer the case may mean that all this goes for nothing. The man to whom the case is referred forgets to even say thanks. A few such experiences tend to sour the general practitioner against specialists in general.

The object of this paper is to draw a closer bond of union between the general practitioner and the specialist; to call the attention of the specialist to his duty whenever it is plain.

I do not recommend that physicians be paid a stipulated percentage of all fees received from cases referred by them. I should consider this a great wrong. What I do advocate is that when a physician has expended time and energy in getting a patient to come to us, or has prescribed for the patient without compensation, it should be our duty to pay the physician a reasonable fee.

EOSIN IN OPHTHALMOLOGY.—Dr. Sorigner calls attention to the advantages to be derived in cases of ulceration, foreign bodies, etc., in the eye, from a drop or so of a two per cent solution of eosin, which stains the altered tissues, etc.—*Anales de Oftalmol.*, December, 1898.

REPORTS OF SOCIETIES.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

REGULAR MEETING, JANUARY 10TH, 1899.

Dr. Coleman in the Chair.

Dr. Casey A. Wood reported a case of *embolism of the central retinal artery.*

The subject of this report is W. H. M., aged 56. He has a history of acute articular rheumatism of twenty years' standing, with subsequent relapses, and has acquired an aortic regurgitation. He never had any trouble with his eyes except the usual presbyopia, until two days before the date of presentation, when he noticed a cloud over his left eye, which came on while reading, without pain or other symptom. He shortly afterward found he could see better with the affected eye by looking sideways. He was seen about sixty hours after the blindness. V L=1-5 eccentrically, and Jaeger XVI.; not improved. V R=1 and J i with glasses. There is a well-marked edema of the whole left retina, except of a small area extending from the temporal third of the disc to within a D D of the fovea. The latter is occupied by a small reddish spot. The veins have a slightly marked, sausage-like appearance. The arteries are smaller than normal, and partially covered by the retinal swelling. The sausage-like appearance of the former is seen to be partly due to their occasional burial in the opaque retina. There are no marked changes in the disc. During the following two weeks the edema gradually lessened (the vessels becoming more plainly visible), and the unaffected retinal area seems larger. The point of interest in this case is the presence of several cilio-retinal arteries supplying this portion of the fundus. When first seen the swelling of the retinal elements was quite marked, and seemed to encroach upon and overlie the island of the normal retina, so that with the ophthalmoscope one could appreciate the difference in the level between the normal retino-choroidal epithelium and the upper layers of the edematous retina.

The treatment was that of Fischer—deep massage of the globe, prolonged and rather severe, with albolene, or plain vaseline, which was put into the conjunctival sac and pressure made especially upon the equator of the globe continuously for ten minutes at a time. The results were probably negative, although the massage was persevered in for a week. The fundus picture is by Miss Cleveland, and shows very well the cilio-retinal vessels and the unaffected area of the retina supplied by them. Several confreres examined the case in its various stages, but were not able to find any trace of the embolus. All the signs point to its lodgment behind the globe in the main body of the artery. The accompanying perimeter charts show several observations, at regular intervals, of the size and shape of the field.

Dr. F. C. Hotz: These cases are interesting on account of their final outcome. We know that there are no definite means to help these patients. Cases have been reported in which massage has been successful, but Dr. Hotz's experience coincides with Dr. Wood, that massage has not benefited any of the cases in which he has used it. He asks Dr. Wood whether he thinks iridectomy had anything to do with the result he reported in a case of embolism some time ago.

Dr. Wood did not obtain a brilliant result from iridectomy, and has only treated cases of recent origin. The case Dr. Hotz refers to came under Dr. Wood's observation three or four years ago. Inasmuch as the prognosis was gloomy and other treatment had failed, an iridectomy was suggested as a last resort. It was a case of partial embolism of the artery, and a measurable improvement in central vision, and in the field of vision certainly followed the iridectomy; but it may properly be regarded as an open question whether the operation should be given the credit of the improvement.

Dr. W. F. Coleman reported a case of embolism of one of the infero-nasal retinal vessels with recovery. There was a history of loss of vision for about four weeks. The patient came to him about a year ago, when vision was equal to counting fingers at twelve feet. The patient was told that there was very little use of attempting to treat him, as no treatment would seem to offer any prospect of success. Galvanism was tried, about a dozen treatments being given, using from five to seven milliamperes daily. At the end of these treatments he could read the second-hand on a watch. His field of vision became largely increased, perhaps within ten or fifteen degrees of normal. While this treatment and recovery may have been simply a coincidence, or the case one of spontaneous recovery, Dr. Coleman doubts it very much. The man was seen four months afterward, and his vision remained equally good.

Dr. Ware recalled a case in which galvanism was used with temporary improvement, but it relapsed.

Dr. F. C. Hotz reported a case of *Hysterical Amblyopia* in a young lady. She had been seized with violent pain in forehead and failure of vision in left eye. There was a history of vision having been obscured for several hours in the right eye. R V $= \frac{20}{30}$, unimproved by glasses. No changes in any part of the eye could be detected by ophthalmoscope. The field of vision for white and colors was markedly contracted with inversion of the color fields. L V = perception of shadows; pupillary reaction good; media clear and papilla well defined, with some fullness of the retinal veins. Two months after examination vision returned in left eye and headaches disappeared. About two weeks after being sent away to school, the headaches returned and grew very severe and almost continuous, her studies being kept up with the greatest suffering. On her return from school Dr. Hotz found R V $= \frac{20}{30}$, L V $= \frac{20}{100}$. Her refraction was worked out under homatropin and cocain, and the following correction was ordered for constant wear:

$$\begin{array}{ll} \text{RE} + 1.50 \text{ sp} \bigcirc + 1 \text{ cyl. ax. } 90 & = \frac{20}{20} \\ \text{LE} + 2.50 \text{ sp} & = \frac{20}{40} \end{array}$$

Optic discs clear, but presented a peculiar glistening appearance.

No relief from frontal headaches was experienced after wearing these glasses for one week. The fields of vision were again taken, showing much contraction of the color fields, but this time the green being much smaller than the red field. The left field presented a peculiar kite-shape appearance, extending downward very much and considerably contracted above.

Dr. William H. Wilder had also seen this case. The girl was of a pronounced neurotic temperament. Vision was 20/20 in each eye with proper correction of the refractive error. Later she developed sudden partial blindness of the left eye, at which time Dr. Wilder saw her in consultation with a physician. He examined the field of the left eye and found some of the characteristics of hysterical amblyopia, namely, the green field in many places larger than the red. He did not see her in a previous attack when the sudden blindness came on in one eye. He felt pretty sure that the case was largely hysterical, an opinion concurred in by Dr. Herrick, and accordingly a favorable prognosis was given. Dr. Wilder saw her mother once during the past year, and she told him that her daughter had recovered entirely.

Dr. Clark W. Hawley has had an hysterical case similar to the one described, there being a marked change of the field in violet and blue, both coming considerably inside of the red. At first, only the green and red fields were tested, and later it was suggested to try violet and blue. The hysterical characteristics showed more markedly under them than in the green or red.

Dr. W. F. Coleman reported the sequel of that case on which he had performed Mules' operation, which is not favorable. Two weeks after he had shown him to the society the glass ball began to appear. The edge of the wound was freshened and closed with sutures, but not successfully. One night before the glass ball escaped there was excruciating pain in the stump. Within two days the eye began to get inflamed, and very soon a well marked case of serous iritis developed, which suggested a sympathetic origin. The pupil dilated well and regularly under atropin. Mercury was given internally, and hot applications applied, and recovery is taking place slowly from the iritis. His vision is to-day 20/20 minus. A ball has been inserted in the conjunctival sac, and has behaved itself respectably, and made a good stump. Dr. Coleman has tried a sponge in the capsule, but as suppuration followed was not gratified with it. He believes it is difficult to implant a sponge under the tissues, and make it remain without suppuration following.

Dr. Clark W. Hawley reported the condition of the man he exhibited to the Society about a month ago, in whose eye there was a dislocation of the lens after needling. Absorption went on quietly without further operation, and he now has vision of 6/9, with + 10 D spherical. Dr. Hawley saw him a day or two ago, there being no disturbance from the dislocation whatever, and the capsule is very clear. A poor result was expected, but on the contrary it is very good. The spots seen on the anterior surface of the capsule are not now visible.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting January 17, 1899. Dr. George C. Harlan, Chairman, in the chair.

Dr. de Schweinitz reported the results of *three operations for Ptosis*, performed according to the method described by Dr. J. O. Tansley (Trans. Amer. Ophthalmolog. Soc., vol. vii, 1894-96, p. 427). The first was a congenital ptosis in an Italian boy, aged 11, in whom result was only tolerably satisfactory; the others were cases of traumatic ptosis, one of twenty years' standing (the levator having been cut), and the other of six weeks' duration (from a blow with a blunt instrument). In the last two cases the result had been excellent. In one of these patients, presented before the Section, the lid movements, six months after operation, were perfect. The levator, however, had regained much of its power.

Discussion.—Dr. G. C. Harlan had been pleased with his success in several cases in which he had operated according to the method suggested by Grandcléments. Dr. C. A. Oliver also preferred this method in the congenital and paralytic types of ptosis, but advised against the use of chromatized catgut on account of its tendency to denude the cornea of its epithelium. In true traumatic ptosis he preferred, as he had successfully done in two instances, to find and resect the levator muscle.

Dr. Charles A. Oliver gave the history and described the specimens of an almost unique form of injury to the optic nerve by the passage of a *piece of steel completely through the eyeball and the optic disk*, the metal being found almost wholly situated in the optic nerve outside of the eyeball. Immediately after the accident, vision, with the exception of a small field of light-perception, situated down and out, was absolutely lost, thus hazarding the assumption of involvement of the outer and lower portions of the optic nerve in the traumatism, which was afterward proved to be so by post-mortem examination of the parts. The case is interesting by reason of the character of the traumatism; the comparative rarity of the position of the point of exit of the metal; the correctness of the clinical opinion based upon the character of the vision of the actual involvement of the optic nerve; the inability of a powerful magnet to withdraw the foreign body back into the eyeball; and the anatomical proof of the wisdom of the judgment that blindness would have become complete if the eye had been let alone.

Discussion.—In 1893 Dr. de Schweinitz was consulted by a gentleman for atrophy of the left eyeball and irritability of the right eye, possibly from sympathy. Seventeen years before, the patient had been struck with a sliver of iron in the left eye. At the time of examination he had a 4 mm. scar in the ciliary region of the sclera, extending into the cornea, annihilation of the anterior chamber and tenderness in the ciliary region. No light-perception. The symptoms in the right disappeared after the correction of an error of refraction. During the enucleation of the left eye, difficulty was experienced in cutting the optic nerve. After extirpation, a piece of steel 1 cm. by 3 mm. was found imbedded in the sclera and optic nerve. Dr. Harlan related a similar experience.

Dr. Hansell detailed the case of a young man shot through the right eye. The X-rays located the shot in the orbit slightly posterior to the globe. Under expectant treatment the inflammation subsided, and the eye remained quiescent for several weeks. Then symptoms of sympathetic irritation developed, and the injured ball was enucleated. Upon examination the shot was found lodged in the optic nerve. This case seems to substantiate the claims made recently that sympathetic ophthalmia may arise from injury directly to the nerve, and be conveyed by means of the lymph channels of the optic nerve to the tract, and thence to the sound eye. But it must be remembered that in most cases, as in this one, the anterior structures have been seriously damaged, and the origin of the sympathetic involvement may well be the ciliary region, which, it is universally admitted, is the "danger zone."

Dr. Harlan reported a case of *splinter of iron in the eyeball*, with iritis and hypopion, located by the X-rays and removed with the electro-magnet. A machinist was struck in the right eye by chip of iron from a cold chisel, nine days before he presented himself at the Wills' Eye Hospital. Although suffering considerable pain and loss of vision, he had simply bound up the eye and continued his work. He had a small scar near the temporal border of the cornea, in the equator of the ball, iritis with posterior synechia and hypopion, and haziness of the lens preventing a view of the fundus. In the middle of the outer half of the iris, behind the corneal scar, a small bead of lymph seemed to hide a penetrating wound, and streaks of opacity, extending from the temporal to the nasal side of the lens, suggested that a spicula of iron had passed through it and lodged in the fundus. Dr. Leonard, of the University laboratory, reported that a long, narrow splinter of iron was lodged just behind the iris, transfixing the margin of the lens. An incision 5 or 6 mm. long was made through the cicatrix in the cornea, and the large, blunt electrode of a Hirschberg magnet was applied against it externally, when an iron splinter 10 mm. long and 1 m. wide was promptly extracted. Ice was applied for a few days, and the patient left the hospital with the eye nearly quiet and no other disability than a cataractous lens. Attention was called to the fact that the lens and vitreous afford the most favorable field for the removal of foreign bodies by the magnet after the lapse of considerable time, as they do not become involved in dense cicatricial tissue, as when lodged in the choroid. The skiagraph was shown of another case in which a chip of iron was found, after enucleation, imbedded in the choroid near the optic disk, where it had been for three weeks. It was so firmly incased in scar tissue that the magnet had no effect when applied directly, and quite a tedious dissection with the scissors points was necessary to release it. It is not probable that it could have been dislodged even by a Haab magnet.

Foreign Body in the Lens Located with Röntgen Rays.—Dr. de Schweinitz read the notes of a case of foreign body (a piece of steel) in the lens, which had remained quiescent for nearly 14 months (the lens being partially cataractous), which was accurately located by the X-rays according to Dr. W. M. Sweet's method. When the pupil was widely dilated this piece of steel could be seen in the upper part of the lens, but could not be seen when the pupil had returned to its natural size. In other words the localization with the ophthalmoscope and with the X-rays was identical, and the case was presented as an admirable demonstration of the value of Sweet's method.

Dr. M. W. Zimmerman reported a case of *Linear Rupture of an Ulcerated Cornea, Followed by a Large Intraocular Hemorrhage*, occurring in an eye previously damaged by glaucoma. The loss of corneal tissue involved about one-half its thickness and almost its entire area. No operation had been performed in the tissue that subsequently ulcerated. On the sixth day, while still wearing a pressure bandage, and with no history of direct injury, there was a sudden rupture of the thinned cornea, almost horizontal in direction and about 7 mm. long, through which appeared a large hemorrhage, carrying with it the crystalline lens. Enucleation was necessary, and the specimen demonstrated the above facts. The patient was a healthy working woman, aged 56.

Discussion.—Dr. Wm. F. Norris stated that linear rupture after glaucoma was not very unusual. He had enucleated a glaucomatous eye in which a violent hemorrhage had occurred, and in the examination of the ball could determine no special cause.

Dr. Oliver considered the case of Dr. Zimmerman to be one of the terminal stage of glaucoma. He cited the brief details of a woman who had recently come under his care, in whom the right eye had passed on to such a condition just before his seeing it, while the left, which was saved by prompt local treatment and appropriate general measures from an attack of acute hemorrhage glaucoma, had its vision restored from a small area of light-perception to almost full acuity in a large field, as illustration of the type.

Dr. H. F. Hansell and Dr. Wm. G. Spiller reported two cases of *Unilateral Total Ophthalmoplegia*, crossed hemiplegia being associated with the ocular paralysis in one case.

The first patient described had received a punctured, transverse wound in the lower lid of the right eye from the thrust of an umbrella ferule, about six months previously. The wound was just above the margin of the floor of the orbit, and when the man was examined shortly after the injury had been received, he was found to have complete ophthalmoplegia of the external and internal muscles of the *right* side, loss of sensation in the distribution of the ophthalmic division of the right fifth nerve, paralysis of the left side of the face and of the *left* extremities. Indications of slight edema of the right optic nerve were present for a short time.

Six months after the beginning of the trouble the muscles of the exterior and interior of the eye and of the left extremities had, to a great extent, regained their normal power.

The complete paralysis of the third, fourth, ophthalmic division of the fifth, and sixth nerve, with the escape of the optic nerve, led the authors to conclude that the injury had been received at the sphenoidal fissure. Associated movements occurring in the paralyzed limbs were referred to and discussed. The transitory exophthalmos was explained by the loss of tonicity in the external muscles of the eyeball. The crossed hemiplegia was believed to be due to a lesion in the upper part of the right side of the pons, or in the right cerebral peduncle, or at the inferior part of the right internal capsule.

The second case was one of injury at the inner third of the supraorbital ridge on the left side. At the time of the examination, several days after the injury, marked depression was noticed at the site of the injury, indicating a fracture of the anterior plate of the frontal sinus. The man had partial loss of vision, diplopia, and total inability to move the eyeball. The area supplied by the supraorbital nerve was anesthetic. Ptosis was not present. The pupil was dilated and immobile, accommodation was lost, and numerous hemorrhages into the retina were found. The loss of sensation in the skin on the left side of the forehead was explained by the injury of the supraorbital nerve, and the total internal and external ophthalmoplegia by orbital hemorrhage and exudation.

HOWARD F. HANSELL,
Clerk of Section.

BATES believes the aqueous extract of the suprarenal gland to be the most powerful astringent in existence. A one per cent solution instilled into the eye, whitened the conjunctiva in from forty seconds to two minutes. Pupils not affected by it. It has no antiseptic or anæsthetic properties. The relief from pain is due to its wonderful astringent properties. It is used in all forms of inflammation of the eye and is distinctly useful.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT PHYSICIANS.

JANUARY 19, 1898.

The president, Dr. G. E. Brinckerhoff, in the chair.

Gumma of the Conjunctiva.—This case, shown by Dr. Barkan at the December meeting, was again presented by him. Under the use of inunction and 20 grains three times daily of the iodid, the gumma had melted away, and the conjunctiva is normal in appearance, the only evidence remaining being a superficial opacity of the cornea resembling a sclerosis near the original seat of the gumma.

Dr. Pischl mentioned a similar case which he had reported some time ago.

Foreign Body Extractions by the Haab Magnet.—Dr. Barkan presented three patients, from the interior of whose eyes he had extracted foreign bodies with the large Haab magnet, the eyes being saved, with various degrees of vision approaching normal. He had made twelve such extractions, and his experience had led him to abandon the use of the sideroscope of Asmus, owing to the tediousness attendant upon its use. He now relies upon the production of pain on closing the circuit of Haab's magnet as a guide to the existence of a foreign body.

Dr. Pischl believed that pain is only present when the movement of the foreign body causes it to press upon tissue supplied with nerves.

Dr. Eaton briefly described his experiences with the use of a very large magnet which had been made for him four years ago, with which he had saved several eyes by extracting bits of metal. In two cases the closing of the circuit caused no pain, though chips of iron were present. In one of these cases the foreign body was drawn out of the lens through the corneal wound without any sensation of pain.

Epithelioma of the Conjunctiva.—Dr. W. A. Martin presented a man aged 42 with an epithelioma of the conjunctiva the size of a small pea situated 3 mm. to the inner side of the right cornea. It had existed one month. Specific disease could be excluded.

Bezold's Continuous Tone Series.—The complete apparatus as made by Edelmann, and as described by Knapp in *Archives of Opth.*, was exhibited by Dr. Barkan, who also demonstrated the use of *Zeiss' Binocular Corneal Loupe*, the instrument shown being the first one made by Zeiss and at the request of Dr. Barkan. It is mounted on a stand which also carries a chin rest and has a third tube by which an electric light is directed upon the eye. With these convenient exceptions it is essentially the same apparatus as Dr. Edw. Jackson's.

The Bacillus of Whooping-cough.—Dr. Henry L. Wagner reported a case of persistent cough, in which a bacteriological examination made by him of the nasal secretion showed the bacillus of whooping-cough. A peculiar feature was that the germ is not found on the conjunctiva.

Dr. J. A. Black was elected a member.

The annual election of officers was then held, resulting as follows: President, Dr. W. A. Martin; 1st vice president, Dr. J. H. Philip; 2d vice president, Dr. Kate Overacker; secretary, Dr. R. L. Cox; treasurer, Dr. K. Pischl.

OPHTHALMIC SECTION OF THE AMERICAN MEDICAL ASSOCIATION.

Among the other arrangements affecting this section is a joint session with the Section on Otology and Laryngology that will occupy the whole morning of the second day. The subject for discussion is "The Relation of Ocular Diseases to Affections of the Nose and Neighboring Cavities." It will be introduced in an address by Dr. Charles Stedman Bull, of New York, entitled "Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit," followed by Dr. Bryson Delavan, of New York, on "Nasal Stenoses in the Relation to Ocular Disturbances;" Dr. J. A. White, of Richmond, Va., "Eye Troubles Attributable to Nasopharyngeal and Aural Disturbances," and Dr. J. H. Bryan, of Washington. "Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye." Three symposia on sympathetic ophthalmia, chronic glaucoma and the diagnosis and treatment of the rarer forms of ametropia have been arranged. For the greater convenience of members who desire to attend sessions of both sections, two commodious adjoining halls have already been secured. A preliminary programme furnishing further details on these and other matters will be published in May.

Anti-Gout Remedies in Glaucoma.—If iridectomy is refused, much benefit can be attained in severe cases of glaucoma by administering piperazin and ordering an anti-gout diet, as a gouty tendency is frequently the basis for the eye affection.—*Opthmol. Klinik*, 1898, 21.

REVIEWS.

THE ETIOLOGY AND EDUCATIVE TREATMENT OF CONVERGENT STRABISMUS. BY PRIESTLY SMITH, M. R. C. S. THE BOWMAN LECTURE FOR 1898. *British Medical Journal*, July 2, 1898. (Reprinted almost entire in the OPHTHALMIC RECORD for October, 1898.

WHEN AND WHY SHALL WE OPERATE IN INSUFFICIENCIES OF THE OCULAR MUSCLES? BY ALEXANDER DUANE, M. D., *New York Medical Journal*, June 4, 1898.

It is apparent that the study of those abormal conditions of the eye dependent upon disturbances of its motility are attracting more and more attention. It is, moreover, becoming more and more evident that the subject is a most extensive one; that it is beset with difficulties in many respects far greater than those connected with the subjects of refraction and accommodation, and yet that none can afford to neglect the practical application of the principles founded upon facts discovered by careful and accurate observers of the functions of the oculo-motor apparatus in health and disease. The relative importance of the various aberrations of motility as estimated by different observers deserves notice. This appears to be the result of an imperfect understanding and difference in opinion as to what constitutes the physiological standard of ocular motility, and still more to be the result of a failure to compare and rightly estimate the departures from this normal. Thus convergent strabismus is perhaps still viewed too much as if it were an independent entity — a purely muscular anomaly.

Mr. Priestly Smith in his summary of the etiology and course of convergent strabismus emphasizes another factor when he defines it as "a disorder of innervation in which the visual centers fail to control the act of convergence," and though he goes on to state that "the failure of control depends largely on faulty development of the visual apparatus," in no part of his lecture, while describing the etiology in detail, does he mention the influence of vertical tensions and deviations in producing lateral strabismus, though proved by Stevens ten years ago, and frequently met with and reported by others since.

It is too often forgotten that *all* deviations are, properly speaking, strabismic, varying only in extent, not in nature. Accordingly what were formerly termed latent deviations, the heterophorias of to-day, are called by Duane superable squint, and by Maddox suppressed squint.

Duane, in describing the different varieties of muscular over-action and under-action, has pointed out that, while the abnormality may affect "either the muscle itself, its tendon, or the nerve nucleus supplying it, it cannot be too strongly insisted upon that these three varieties, however dissimilar in origin, show in their symptoms and objective signs no real point of difference." Thus the convergent strabismus resulting from over-action of an inferior rectus and consequent hyperphoria from subduction (Maddox) differs not a whit in its symptoms and objective signs from one resulting from interruption of the action of the higher centers which control the movements of the eyes as so admirably described by Mr. Priestly Smith.

Most valuable is his presentation of his subject, and his unequivocal support of the educative principles so long advocated by Javal will be an incentive to others to make use of them. It will be well to lay to heart his warning that "the old idea that the squinting child needs a little skillful cutting and nothing more, is dying out." We may justly go even farther than this and say that the day has come when continuous convergent strabismus can generally be prevented in many cases by the early detection and correction of latent deviations, i. e., superable, suppressed squint, and that it is often as important to the child to detect these conditions as to discover the existence of hyperopia and astigmatism.

As much skepticism and prejudice still exists as regards the wisdom of the operative treatment of heterophoria, the well-balanced paper of Dr. Duane, moderate yet firm, simple and sane and unmarred by extreme statements, is most opportune. He refutes on the evidence of his own work the various objections brought against such operations, showing that the conditions for which they are done are neither rare nor inconstant, and the relief resulting from operation is neither uncertain nor temporary, but generally sure and permanent.

But such success necessitates that the muscle at fault be found, and its innocent fellows spared. "Care must be taken not to tenotomize an inferior rectus when hyperphoria is due to insufficiency of an elevator, or tenotomize a superior rectus when there is insufficiency of a depressor. . . . We must not rest satisfied with the statement that our patient has so many degrees of esophoria or hyperphoria, but must find out what is the cause of the esophoria or hyperphoria e.g., whether it is due to insufficiency or overaction of one of the associated movements of the eyes, or two or more conditions combined. If we are dealing with an esophoria or convergent deviation, we shall treat it in one way if the esophoria means deficient divergence or insufficiency of one or both externi, and in quite a different way if it means either excessive convergence, *per se*, or excessive action of both interni."

It is to the unfortunate results of treating symptoms instead of causes that much of the prejudice against and opposition to operations on the ocular muscles must be attributed; it is as irrational to expect to succeed in thus removing a muscular anomaly and its results, as to expect to cure accommodative asthenopia without estimating the actual condition of refraction. F. B. EATON.

"THE EFFECT OF THE EXTRINSIC POISONS ON THE EYE."—Looking over some files of the *Journal of the American Medical Association* recently, my attention was attracted to a very able article by J. Herbert Claiborne, M.D.

This subject is particularly interesting to me at this time, because of the unusual number of cases of toxic amblyopia I have encountered within the last few months, and I trust a brief review may not prove uninteresting to others.

"By the term toxic amblyopia," says Dr. Claiborne, "I understand an interference in vision produced by certain drugs or substances that have been absorbed by the human system." And he proceeds, after Dr. Wood, to divide them into two great classes: Those directly affecting the optic nerve, and that other class whose symptoms are unattended with nerve lesions. Under the former class he makes distinctions: "(a) those that produce a retrobulbar neuritis: among these tobacco, alcohol, tobacco-alcohol, carbon bisulphid, hasheesh, iodoform and arsenic are chief; (b) those that produce other forms of optic nerve and retinal disease, such as lead, quinine, salicylic acid or the salicylate of sodium, venom of poisonous reptiles, silver, mercury, ergot, nitrite of amyl, the oxide of nitrogen gas, malefern and pomegranate."

Of THESE CLASSES my experience has been chiefly with the lesions and symptoms caused by the tobacco, tobacco-alcohol, alcohol and quinine absorption; and so far as I have been able to determine, these are the exciting causes in a vast majority of cases.

I concur with Dr. Claiborne that while amblyopia occurs most frequently from combined toxic doses of alcohol and tobacco, setting up retrobulbar optic neuritis, it also not uncommonly happens as the result of either. I am of the opinion, too, that it is highly improbable that dilute alcoholic drinks moderately and irregularly taken produce any perceptible disturbance of the functions of the vision; and equally of the belief that it is the frequent or regular "tipler" of the stronger liquors who is most susceptible to amblyopia rather than the so-called "spreer." Of course, as in all other similar cases, individual idiosyncrasy plays an important part, whereas on the other hand alcohol and tobacco may have been habitually taken to excess through a long life without producing any symptoms of the disturbance; on the other, marked signs of the disease may appear after relatively brief indulgence. I knew a man who lived to the ripe old age of ninety-two, who assured me that for the last forty years of his life, he had daily drank one pint of whisky. He had cataract, but there was no optic nerve trouble. On the other hand, I have known quite young men to suffer serious diminution of vision, after a short indulgence in stimulants. It is significant, however, that amblyopia due either to alcohol or tobacco, or to their combined toxic effects, rarely occurs under the age of forty, while most often between the ages of forty and fifty.

Of amblyopics there is naturally great disparity between the sexes. Habit, custom and association doubtless account for this in large measure. For *cæteris paribus*, it is scarcely probable there would be any appreciable difference in results. With the possible exception of bartenders, occupation seems to have little to do with predisposition to the disease. The amount, strength, frequency of ingestion seem much more potent in effect. Nor is it practicable to discern differences between signs and symptoms of amblyopia caused in one case by alcohol, in another by tobacco. There can be no doubt, however, that tobacco alone can and does produce grave loss of vision. Even the use of snuff has been known to cause marked amblyopia. It is not uncommon to meet the "cigarette fiend" with a steadily increasing diminution of sight.

One of the earliest symptoms to be noticed, perhaps, is the patient's complaint of mistiness affecting both eyes, or a request for a stronger pair of glasses. A distinctly characteristic symptom, though not always marked at the beginning, is central color scotoma. As a rule the ophthalmoscope will early show congestion of the optic nerve. As the neuritis progresses, the optic nerve grows pallid as the fibers approach the macula lutea. This area sometimes is of triangular shape.

"It is a question whether this form of optic neuritis alone ever goes on to complete blindness. It is always well to look to syphilis as a complication, since tobacco, alcohol and syphilis are a frequent trigeminal combination. Recovery is apt to occur only when the disease is recognized in its incipiency, and the patient has the character to jugulate the habit."

Dr. Claiborne goes on to discuss amblyopia caused by carbon bisulphid, hasheesh, iodoform and arsenic in a very interesting manner, but I will pass on to his treatment of quinine amaurosis.

" In referring to the toxic effect of this drug (quinine) on the vision, we always use the word amaurosis and not amblyopia, because it produces blindness.

" Giacomini reported the first case. The amount necessary to produce amaurosis varies greatly. I myself have cited a case in which fifteen grains produced total blindness, lasting a number of hours, and it is recorded by Vorhees that one person took thirteen hundred grains before blindness set in. I also reported a case in the OPHTHALMIC RECORD, of a 13-year old girl who went blind after taking 2½ ounces. I am inclined to believe that idiosyncrasy is a factor when small doses produce blindness, and that any one may become blind from excessive use of the drug.

" Dr. Knapp in 1881 thus describes the signs and symptoms of quinine amaurosis: 'Marked pallor, general weakness, twitching of the mouth and extremities, total blindness and deafness associated with loud tinnitus aurium. The pupils are widely dilated and do not react to light, but do to accommodation. The patient often loses consciousness to a greater or less degree. The ophthalmoscope shows an absolute anæmia of the optic nerve and retina. The papilla is chalky white and no trace of blood vessel in that or the retina is to be seen. This state of things is seen in every case.'

" I hope I will be pardoned for presenting the conclusions I drew in 1894 from a study of the subject:

1. Quinine in toxic doses may produce blindness.
2. The dose is distinctly indeterminate.
3. The duration of the amaurosis varies largely.
4. The field of vision remains contracted.
5. Central vision usually returns.
6. There is color blindness at first; the color perception is ultimately within the central field.
7. The ophthalmoscopic picture is that of white atrophy.
8. Experiments on dogs show that there is atrophy of the entire optic tract.
9. The same experiments show that the cells of the cuneus are probably not affected."

For lack of space I will not dwell on class 2; the same reason forbids careful consideration of the rarer causes of amblyopia. I think it well to close by giving some of Dr. Claiborne's general conclusions:

"1. There are certain poisons, which, when introduced into the human system, produce characteristic toxic symptoms in the eye.

2. These poisons are divided into two grand divisions: (a) those that produce organic changes in the optic nerve and retina: (b), those that produce no organic change in the optic nerve and retina, in short, those whose effect on the eye is a functional one.

3. The majority of these poisons are found in the list of medicinal remedies.

4. In view of these facts it is obviously important that practitioners of medicine should be intimately acquainted with the toxic effect of these poisons on the eye."

With these conclusions I cannot do other than agree.

—A. W. Calhoun.

Shot Wounds of the Eye.—Professor Tornatola reaffirms the benefits to be derived from a conservative treatment of wounds while hunting. The shot is always asceptic after the explosion, and the lead does not *per-se* irritate the tissues. The danger to be apprehended is secondary infection from without, as he demonstrates by a number of convincing instances. He therefore reduces this danger to the minimum by suturing, the tiny hole where the shot enters, after excision in the shape of a small, long ellipse. The wound heals in two or three days, and thus shortens the danger period materially.—*Revue Gen. d'Ophth.*, December 31, 1898.

The Blind in Russia.—Of 302,000 totally blind persons in Europe, not less than 192,000 are in Russia, or a proportion of 1 to 500 of the population. France, England, Germany, Italy and Spain have a better showing, that of a little less than 1 out of every 1,000. The Russian statisticians, and in this case competent physicians, attribute this plight of the inhabitants to the bad hygienic state of peasant life, to the intense cold and to the glare of the sun on the snow. To these causes might possibly be added the minute foreign bodies carried by high winds.—*Journal of the American Medical Association.*

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. J. G. Huizinga has been appointed Ophthalmologist to Halsted street dispensary, Chicago.

At a recent meeting of the Philadelphia Medical Club Dr. George E. de Schweinitz was elected vice-president.

Dr. Horace M. Starkey, of Chicago, has accepted a professorship in Ophthalmology in the Chicago Eye, Ear, Nose and Throat College.

Dr. L. Webster Fox delivered a lecture on "Diseases of the Eye" before the Mid-Winter Meeting of the Bucks County Medical Society.

At the last meeting of the staff of the Cook County Hospital, of Chicago, Ill., Dr. Allen T. Haight was elected Ophthalmologist to the institution.

Dr. Aaron Schloss of Stockton, Cal., has been appointed adjunct professor to the chair of the Sciences of Eye, Ear, Throat and Nose in the College of Physicians and Surgeons, San Francisco.

Professor Julian J. Chisholm of Philadelphia, retired from active practice eight months ago. He will hereafter divide his time between Charleston, Baltimore and some northern health resort.

A very useful and readable little work is the new book on "Ocular Therapeutics," by Dr. Ohleman of Minden, Germany, which is translated and edited by Dr. Charles A. Oliver of Philadelphia. It is full of practical material and is published by P. Blakiston's Son's & Co.

Dr. Frank Van Fleet of New York, has been elected chairman of the legislative committee of the New York State Medical Society. We trust this means that some good legislation will be enacted relative to restraining opticians from indulging in the practice of ophthalmology.

Dr. George H. Stubbs, Oculist and Aurist to the Southern Railway, The Alabama Great Southern Railway, the Hillman Hospital, etc., at Birmingham, Ala., will spend the months of February and March among the larger hospitals and clinics in Philadelphia, Baltimore and New York.

This month (March) the fourth volume of Norris and Oliver's "*System of Diseases of the Eye*," will be distributed, and will be welcomed by all ophthalmological workers. This is unquestionably the most important work on diseases of the eye in the English language, and should be in the library of every ophthalmologist.

Dr. H. V. Würdemann, of Milwaukee, who has been associate editor of the *Annals of Ophthalmology*, in charge of the German literature, has accepted the position of editor-in-chief, vice Dr. Casey A. Wood, of Chicago, resigned. Dr. Wood will retain an interest in the *Annals* and will remain in charge of Italian ophthalmic literature.

At a recent election of the "Presbyterian Eye, Ear and Throat Charity Hospital" of Baltimore, Dr. T. L. Savin, Dr. A. L. Bossyns and Dr. J. Frank Crouch were appointed assistant surgeons. Dr. J. F. Jones, Charles G. Buck, H. Hardcastle, J. L. Spruill, R. H. Johnston, C. H. Teenken, were added to the medical staff, and Dr. G. B. Crawford was appointed to succeed Dr. T. L. Savin as resident physician.

At the fourth annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association, held in New Orleans, February 10th and 11th, the following officers were elected:

President, W. Scheppegrell, New Orleans; 1st vice-president, M. A. Goldstein, St. Louis; 2nd vice-president, H. V. Würdemann, Milwaukee, Wis.; 3d vice-president, E. C. Ellett, Memphis, Tenn.; secretary, Fayette C. Ewing, St. Louis; treasurer, W. L. Dayton, Lincoln, Neb.

The next meeting will be held in St. Louis in April, 1900.

We are in receipt of a letter from Dr. de Schweinitz of Philadelphia, who says that the statement made in a recent issue of the Ophthalmic Record concerning his appointment as "Emeritus Professor of Ophthalmology" in the "Philadelphia Policlinic," is incorrect. An Emeritus chair was offered him, but he declined it. Dr. de Schweinitz was, however, appointed "Consulting Ophthalmologist to the Policlinic Hospital," and we certainly congratulate the "Policlinic" in having a connection of any kind whatsoever with our distinguished co-laborer in Philadelphia.

THE NEW *Zeitschrift für Augenheilkunde* made its first appearance in January, 1899. It is published by S. Karger in Berlin, and costs thirty marks a year. It is edited by Prof. Kuhnt, of Konigsburg, and Prof. V. Michel, of Würzburg, assisted by the following well-known and able corps of collaborators: Cirincione, V. Ewetzki, V. Grosz, Gruber, Kamocki, Koster, Widmark, Bach, Ozermak, Dimmer, Haab, Mellinger, Pagenstecker, Peters, Raehlmann, Schmidt-Rimpler, Silex, Uhthoff, Vossius and Wilbrand. With names like these the new enterprise must be successful from the very start.

A NEW medical journal is being published in St. Paul, called the *St. Paul Medical Journal*. Dr. Burnside Foster is the editor-in-chief, and the journal is published under the auspices of the Ramsey County Medical Society. Its first number is extremely creditable, and if it retains its present excellence it is destined to be one of the important medical journals of this country. Among the ophthalmologists who assist in its publication are Drs. Edward Boeckmann, J. F. Fulton, Cornelius Williams and T. McDavitt of St. Paul, and H. E. Holmes of Minneapolis. We wish the new journal prosperity.

IN AN investigation as to the vision of the children in the Rochdale Parish Church School, Menzies first tested each eye in each child by means of Snellen's types and trial lenses, and then examined with the ophthalmoscope and retinoscope those whose vision was subnormal. He found 165 cases of hypermetropia in 66 boys and 99 girls; 40 cases of astigmatism in 29 boys and 11 girls; 16 cases of myopia in 9 boys and 7 girls. Included in this table are thirteen cases of nebula or other opacity of the cornea. In these cases the refraction was ascertained by retinoscopy.—*Philadelphia Medical Journal.*

AT THE annual meeting of the Episcopal Eye, Ear and Throat Hospital, of Washington, D. C., the following were elected Trustees of the institution:

Drs. W. H. Wilmer, C. H. Alden, F. P. Austin, Robert S. Chew, H. T. Frey, R. B. Mason and H. B. Noble.

One thousand two hundred and seventy-nine patients were treated the past year, 6,237 calls made, 173 patients admitted to the house, 225 operations performed, of which 155 were eye operations.

The receipts were $5,000, and the expenses nearly the same.

We quote a part of the London letter to the *New York Medical Record:*

"Do you know anything of the 'Philadelphia Optical College,' which 'examines in absentia and grants the degree of Doctor of Refraction?' At least a Yorkshire chemist announces that he has obtained such a diploma, testifying that he is 'entitled to the highest honors the college can bestow.' He survives, however, the weight thus laid upon him. I wonder whether this is an instance of the proverbial Yorkshire sharpness or a skit on the Spectacle-makers Company, which has lately enrolled over two hundred fellows."

The staff of the *Annals of Ophthalmology* will shortly be enlarged by the appointment of six collaborators. Abstracts of Dutch, Russian, Scandinavian, Polish and Grecian literature will be hereafter included. With these, the abstract departments of the journal will cover the ophthalmic literature of all the world. Book reviews and abstracts of foreign literature have generally appeared in the *Annals* several months in advance of other publications, even of journals of foreign countries, where the originals were published. The abstract departments are a very valuable feature of the *Annals*, as references to all the up-to-date literature are here collected. Hereafter only original papers of first importance or of the most exhaustive type will be accepted for publication in the *Annals of Ophthalmology*.

At last the long promised "American Text Book of *Diseases of the Eye, Ear, Nose and Throat*," by de Schweinitz and Randall, is out, and like many other good things, it is well worth waiting for. It is published by Saunders of Philadelphia, contains 766 engravings, 59 of them in colors, is well indexed, beautifully produced with good paper and print, and is unquestionably the best thing of the kind in the English language. It is not only a valuable book for the general practitioner, and for the specialists, but for the medical student as well, who will find in one book of 1,250 pages, the latest information on the eye, ear, nose and throat. By purchasing this one book, the student will avoid the necessity for buying three books, which will, of course, be a distinct economy in the end.

The New York State Medical Society, which convened in the city of Albany January 31st to February 2d, inclusive, was a very interesting and profitable meeting. Among the many valuable papers that were presented, four were of special interest to the ophthalmologists.

A paper by Dr. St. John Roosa, on the New Operation for Strabismus, devised by Panas. One on Glioma, by Dr. Herman Knapp, and one by Dr. Henry D. Noyes, on Operations upon Secondary Cataract, and the presentation of a new discission knife, devised by the author.

The last, but by no ways the least in importance and interest, was a paper by Dr. Lucien Howe, entitled, "An Additional Reason for Requiring in Almshouses Measures for the Prevention of Purulent Ophthalmia in Infancy."

A book that will command considerable attention has recently been written by William A. McKeown, M.D., Belfast, Ireland, entitled "A Treatise on Unripe Cataracts." Dr. McKeown is a well-known ophthalmic surgeon of high repute, and surgeon of the Ulster Eye, Ear and Throat Hospital, Belfast, otherwise this book might not command the attention which it is sure to receive. He believes that immature cataracts may be successfully and safely removed by the use of intracapsular injections and intra-ocular irrigations. He substantiated his assertions by a recitation of 700 cases which have been treated in this manner during the past fourteen years. If Dr. McKeown's predictions are true, it will certainly be one of the sensational episodes in the history of ophthalmology.

The Ninth International Congress of Ophthalmology will be held at Utrecht, August 14, 1899.

Professor Snellen reports that he anticipates a large attendance, and he desires those intending to be present to inform him as to whether they desire to read papers, and whether ladies will be in their party, and which language they prefer for discussion.

There will be three sections. First—Anatomy, Pathological Anatomy and Bacteriology. Second—Optics and Physiology. Third—Clinical and Operative Methods.

The official languages will be English, French and German. The membership fee will be twenty-five francs.

The Executive Committee consists of Argyll Robertson, George A. Berry, M. E. Muller, M. Straub, W. Koster and H. Snellen.

EFFECTS OF THE ARC ON EYES.—The report of Tracinski, in the *Zeitschrift für Beleuchtungswesen* (April 30), gives the results of investigations in connection with the operation of the Zerener welding process, which is now coming into use quite largely. The operator wears a pair of spectacles of dark, smoked glass, besides which he looks through a pane of deep red glass, which is connected with the apparatus. The action of the light is sufficiently reduced by this means, says the *Progressive Age*. He tried using the red glass alone, but it affected his eyes for some time after. The workmen who are using this apparatus at first experience pain in the eyes at night, but later on this disappears; the sight, however, is not affected. He concludes that no permanent ill effects are produced if proper precautions be taken, and if the operator become gradually accustomed to the work. It is a mistake to have a new operator work a whole day with the arc, as he should begin with a few hours a day until the eyes have been accustomed to it. Only those who have healthy normal eyes should attempt this work.—*Scientific American.*

EYESIGHT OF RAILROAD EMPLOYES.—Dr. Ricchi of Florence stated at the Brussels International Congress, 1897, that the Italian railroads require of their employes both eyes normal in regard to visual acuity, ocular refraction, perception of red and green and visual field. They are re-examined when they are forty-five years of age, when they have been injured or affected with a serious cerebral or infective disease, when they are addicted to the use of tobacco or liquor, or merely suspected of diminished visual faculty. The Monoyer scale, Donders' and Holmgren's are the tests used. Nuel advocates re-examination every five years and after every accident, including all the employes on the train and those responsible for that portion of the track. Bickerton remarked that the eyes of candidates for the British navy are not tested until they have been in the service for some years, and then not by a medical man. Beaumont added that the standard exacted by the English railroads of their employes is only one-quarter of the normal eyesight in the better eye. Parliament is powerless to interfere, as eighty members of the House of Commons are directors of railroads and oppose any reform on account of the expense.—*Rev. Gen. d'Ophthal.*, November 30.

THE RETINA IN A CASE OF PARTIAL MACROPSIA.—Professor Holmgren published a couple of years ago (*Nordiskt Med. Ark.*) a study of his own right eye, which was affected with relative scotoma, partial blindness and macropsia for objects projecting an image over .75 mm. on the retina, which were seen two and a half times larger than with the other eye. He explained this macropsia by assuming that the cones had learned to see objects in their natural size, but that they became compressed at some given moment, and two and a half times as many cones were crowded into the normal space, causing them to see objects two and a half times as large as normally. He added that he had bequeathed his eye to the professor of histology for examination. After his death the eye was duly examined, but as twenty-four hours had elapsed it was difficult to distinguish between lesions and cadaveric changes. The full report is published in the *Upsala Läkare Forh.*, July 4, 1898. It can be summarized as the discovery of hemorrhagic cysts and a number of small recent hemorrhages. Around these cysts the elements of the retina presented no pathologic alterations, but seemed to be compressed and bent out of their natural position. There was also in the choroid a membrane of vascularized conjunctiva tissue.—*Rev. Gen. d'Ophth.*, December 31, 1898.

THE Massachusetts Charitable Eye and Ear Infirmary is expected to occupy its new building this year. The superintendent, Dr. Frank Cobb, has had practical supervision of all the construction and arrangement and has given a vast amount of thought to every detail. This building is in every way a model of its kind. No pains have been spared to make it complete and up-to-date in every particular. It is a large four-story, L-shaped building, with a well-lighted basement, facing on Charles and Fruit streets, adjoining the grounds of the Massachusetts General Hospital. Behind it is a small separate building for ophthalmia patients, connected with the main building by a passage way, parallel to this and shut off from the main building by a large sterilizing apparatus, through which all soiled clothes used in the ophthalmia ward must pass before going into the general laundry on the other side. In one basement room is to be a large plant for making ice. This is found to be considerably more economical than buying it. The first floor is occupied by the out-patient department, one wing being devoted to eye and the other to ear patients. There is a separate entrance to the hospital wards on the floors above. The walls of the operating rooms are plastered with Keene cement. This is smooth, hard, nonporous, and better than marble, because there are no joints. This is probably the most perfectly appointed eye and ear hospital in this country.—*St. Paul Medical Journal.*

SECTION ON OPHTHALMOLOGY; American Medical Association.—Dr. Edmond Landolt, of Paris, the well-known ophthalmologist and author, has accepted the invitation of the Section on Ophthalmology to give an address before that body in Columbus next June. Dr. Landolt has chosen the title, "Some Disturbances of the Ocular Movements."

In addition to their regular programs, the Section on Ophthalmology and that of Laryngology and Otology, will devote the morning of the second day, June 7th, to a joint meeting, under the Chairmanship of Dr. Casey A. Wood, of Chicago, and of Dr. Emil Mayer, of New York.

The subject for discussion will be, "The Relation of Ocular Diseases to Affections of the Nose and Neighboring Cavities."

Four papers are to be read on this subject, *by invitation*, as follows:

1. Dr. Charles Stedman Bull, of New York, on "Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit."
2. Dr. Bryson Delavan, of New York, on "Nasal Stenoses in Their Relation to Ocular Disturbances."
3. Dr. Joseph A. White, of Richmond, Va., on "Eye Troubles Attributable to Naso-pharyngeal and Aural Disturbances."
4. Dr. J. H. Bryan, of Washington, D. C., on "Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye."
5. General Discussion on the Main Question.

TO SPEAK of a color-blind artist sounds like joking, said a noted London oculist, but, strange as it seems, there are several persons so affected who nevertheless paint extremely well. Numbers of color-blind people there are, of course, who draw perfectly in pencil, ink and crayons, but I myself know a scene painter attached to a provincial theater who, though "color blind," paints all its scenery, and has quite a local name, not only for his "interiors" and oak chambers, but even for landscapes. I can tell you also of two London ladies who consulted me for color blindness who paint really beautiful pictures. One is a daughter of a late famous artist, and was taught painting by her father. She is quite unable to distinguish red from green, but her colors are labeled with the names and she has been taught which to use for certain effects. Possibly her painting may seem to her eyes, as it were, drawing with a brush and "shading" with the colors. The other is a lady artist of some celebrity who has for years exhibited annually in London. The public is not aware that she is color blind. She painted "The Wedding Group" for a certain noble bridegroom a year or two ago, and also several public men's portraits, and one of an eminent physician fetched 500 guineas. There is a gentleman residing at Kensington who, having years ago left the navy through finding his advancement hopelessly debarred by his color blindness, is at present making several hundred a year by his brush as an artist, designing most artistic and brightly colored picture "posters" for advertisement boards.

New Anesthetics.—Our foreign exchanges contain very favorable reports of the reception of the new anesthetics, orthoform, "orthoform neu" and nirvanin. The dentists are especially enthusiastic. One mentions that he extracted twenty-two teeth with nirvanin at one sitting (*vide* Journal, p. 311). Bardet combines ethyl chlorid with two to four per cent cocain or eucain and applies it as a spray or tampon, thus avoiding the prick of the syringe. It is especially effective for application on the mucous membranes, gums, anus, etc. The tests with it are described in the *Presse Méd.* of January 24.—*Journal Am. Med. Assn.*

Sodium Chlorid for Detachment of Retina.—Lodato asserts that subconjunctival injections of sodium chlorid produce more or less remarkable improvement, amounting to a complete cure in some cases, in recent detachment of the retina. The improvement is marked even after the first injection, or possibly the second or third. If two or three injections are not effective, it is best to desist. These injections are useful in myopic or traumatic detachment, but not if there is much disturbance in the vitreous body. There is very slight, if any, pain and no inconvenience.—*Rev. Gen. d'Oph.*, December 31, 1898.

From recent articles in *Nouv. Remédes*, the opinion is distinctly gathered that protargol is destined to have a permanent place in ophthalmological therapeutics. The authors claim that it has all of the antiseptic power of nitrate of silver and argentamin without being dangerous to the eye from the caustic effects of the latter. In all forms of conjunctivitis protargol is enthusiastically recommended with the one possible exception of trachoma, where argentamin is thought to be an improvement from its more energetic action. The authors especially recommend protargol in from 5 to 10 per cent solutions as an injection in dacryocystitis.

THE
OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, APRIL, 1899. No. 4. NEW SERIES.

ORIGINAL ARTICLES.

NECESSITY FOR KNOWING THE RANGE OF ACCOMMODATION.

J. G. HUIZINGA, M.D.

Professor of Ophthalmology at the Chicago Eye, Ear, Nose and Throat College. Ophthalmologist to the Halsted Street Polyclinic. Member of the Chicago Academy of Medicine, etc.

The importance of that function of the ciliary muscle and lens called accommodation is apt to be underestimated in our ordinary examination of the eye. We too often look upon this organ as a mere optical instrument, which, if it happens to be out of focus, must be put in focus and made to correspond as nearly as possible to an emmetropic eye. The fact that it is a living organ capable of adapting itself more or less perfectly to almost any condition, that it is subject to a large number of diseases and pathological changes, that all the symptoms of deficient accommodation are very similar to those resulting from refractive errors, and therefore easily mistaken for them, seems to be all but forgotten by some. No wonder, therefore, that many persons with a limited supply of ingenuity and mechanical skill consider themselves capable of correcting refractive errors in the eye and consequently hang out the shingle "Graduate Optician." The most important factor in errors of refraction, accommodation, is entirely ignored by them. Nearly all the symptoms of hyperopia that send the patient to the physician for treatment are identical with those of anomalies of accommodation and the only way to differentiate between them is by measuring the range of accommodation.

a much neglected procedure. Usually both manifest and latent errors are carefully sought out and a prescription given corresponding to the manifest together with a certain fraction of the latent error. This fraction differs according to different authorities and the best that can be said of it is that it is largely guess-work. No examination should be considered complete and no prescription for glasses given until the examiner has made himself as familiar with the condition of the accommodating apparatus as with that of the error of refraction. If the range of accommodation is deficient, regardless of the fact whether the eye is hyperopic or emmetropic, that deficiency must be supplied and the proper remedy selected with just as much care as for any error of refraction. All the evil effects of hyperopia result from the fact that the muscle of accommodation is obliged to accomplish that which it cannot. In children this may occasionally be due to a high degree of the refractive error but the experience of the writer is that it is more often due to some anomaly of the zonula, lens, muscle or nerve, resulting in deficient accommodation*. At the age of ten a child ought to have a range of accommodation equal to about fourteen (14) dioptres. If a child of this age were put under the influence of a cycloplegic and it was ascertained that she was hyperopic to the extent of only one-fourth (¼) dioptre, we would probably advise her against wearing glasses and would endeavor to account for headache in some other way than by referring it to the eye. But if the range of accommodation had previously been taken and found to be only two and a half (2½) to three (3) dioptres, the necessity for giving the full correction, even if it is little, is quite obvious. Such cases are by no means rare.

The *normal* range of accommodation is a very vague term and may signify almost anything. What is normal in one case may be abnormal in another, and vice versa. But while this may vary considerably in different individuals and at different ages, there ought nevertheless to be, what, for want of a better term, we may call a *proper* range of accommodation, and where this is deficient it must be supplied by artificial means, i.e., convex lenses.

By the *proper* range of accommodation we mean that condition of ciliary muscles and lens in which the action of the former combined with the inherent elasticity of the latter is sufficient to change the refraction of the eye to such a degree as is necessary to meet all the requirements of vision in the discharge of the particular duties of the patient without requiring the muscle to expend more than two-thirds (2/3) or three-fourths (3/4) of its strength and endurance. It is possible for a patient to have a *normal* without a *proper* range of accommodation. For instance,

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*See the Journal of the American Medical Association, Feb. 18, 1899.

A man 29 years old, whose normal range of accommodation is equal to 7 dioptres, but who is hyperopic to the extent of 3 dioptres, and who, in the discharge of his ordinary duties requires 4 dioptres of accommodation because his work is placed at ten inches from his eyes is obliged to use constantly his entire accommodation, consequently the ciliary muscle must contract to its maximum extent, which it is possible to do only for a very limited time.

Again, take a child 10 years old, whose range of accommodation is normal (about 14 dioptres), who is also a hyperope to the extent of 3 dioptres and requires 4 dioptres of accommodation to do her work; or in other words who must use more or less constantly 7 dioptres of accommodation. While the conditions are practically the same, as in the case of the man, she only uses one-half of her range of accommodation, and thus only one-half of the strength and endurance of the ciliary muscle are required.

The child is still able to go about without suffering any inconvenience from her hyperopia, while the man is constantly handicapped. In both, the range of accommodation is normal; but the man does not have the *proper* range, while the child does have it.

Furthermore, it is necessary to take into consideration the work in which the patient is engaged, or rather the distance from the eyes which it is necessary for him to hold his work. A diamond setter, for instance, often holds his work as close to his eyes as five or six inches, and unless he uses a lens is obliged to call into action from seven to eight dioptres of accommodation. For physiological reasons, he is not allowed to use more than from two-thirds to three-fourths of the strength of the ciliary muscle for any considerable length of time and therefore such a person ought to be possessed of a range of accommodation equal to eleven or twelve dioptres. If it happens to be considerably less than this, even if he is emmetropic, it will be absolutely necessary for him to wear convex lenses during his work, of such strength as will supply the deficiency. A person who holds his work at twelve inches from his eyes uses three and a half dioptres of accommodation and must have in excess of this at least one and a half dioptres as a reserve force so that the total range of accommodation which he ought to have must not be less than four and three-quarters dioptres in round numbers. If he is possessed of only four dioptres it will be necessary to give him a +.75D. lens to use during his work, even if he is emmetropic. If, on the other hand, he has a range of accommo dation equal to nine dioptres, he will be able to accomplish his work without any inconvenience and will not need correcting lenses even if he is hyperopic to the extent of one or two dioptres. Therefore all hyperopes do not need convex lenses, while some emmetropes do. To ascertain the amount of accommodation necessary to use at different distances, we divide the distance in inches from the eyes to the object looked at into forty. Thus a book held at twenty inches from the eyes will require two dioptres to be seen distinctly, at ten inches it will require four dioptres, at eight inches 5 dioptres, etc., etc.

Since, then, it is necessary to take the range of accommodation into consideration in prescribing for our patients, the question, "What rule are we to follow?" naturally presents itself. The range of accommodation practically registers the strength of the ciliary muscle; or at least it registers the amount of influence which it is possible for this muscle to exert upon the adaptability of the eye for different distances. As is well known, no muscle can contract to the maximum of its power continuously for more than a few minutes at a time. Neither can the ciliary muscle. Experiments have demonstrated that a certain fraction (from two-thirds to three-fourths) of its strength can be used more or less constantly without unduly fatiguing it. Making practical application of this fact we find that a person with a range of accommodation equal to three dioptres ought not and cannot use more than two dioptres without subjecting the ciliary muscle to the danger of over-work. A person whose range of accommodation is equal to six dioptres ought not to use more than four, etc. Therefore, to ascertain what lens is necessary to give the patient the proper range of accommodation we may formulate the following rule:

Find the range of accommodation that the patient has.

Find the amount of accommodation required to accomplish the particular duties of the patient. The difference between two-thirds of the total range of accommodation and the amount of accommodation needed, will be the strength of lens required to relieve the ciliary muscle of all improper strain.

Allow me to illustrate this briefly. The positive range of accommodation of a person is equal to two dioptres. The negative range is also two dioptres, making a total R. of A. equal to four dioptres. He needs four dioptres in the ordinary discharge of his duties. Let us assume that of the total of four dioptres at his disposal he can use three. But as he needs four we must supply the difference between three and four, or one dioptre. But suppose that the total range of accommodation is only two dioptres and the patient still needs four. Two-thirds of his R. of A.

would allow him to use one and a half dioptres. The lens to prescribe would be the difference between one and a half and four, which would be two and a half dioptres. Besides the necessity of knowing the range of accommodation as I have indicated, this can be made of considerable assistance in testing those cases of simple hyperopia where the use of a mydriatic is inadvisable or not permitted. The following case taken from my records will illustrate this:

Miss D., school teacher, Chicago; age 27. Vision O. D.$\frac{20}{20}$. Vision O. S.$\frac{}{20}$. Muscle balance perfect. Ophthalmometer shows no corneal astigmatism. Ophthalmoscopic examination shows nothing abnormal.

Symptoms:—Headache, eye strain, blurring of letters after reading a few minutes.

A cycloplegic was refused. Range of accommodation was three dioptres. In her daily work she required from three to three and a half dioptres. Thus her muscle was constantly obliged to exert itself to the maximum of its power and caused all the symptoms of which she complained. A convex lens of one dioptre was prescribed which relieved all her symptoms. During the following vacation another examination was made, this time under the influence of a cycloplegic, which revealed a latent hyperopia of one and a quarter dioptres.

Experience with a large number of cases has convinced us that the glass that supplies the deficiency in accommodation will also relieve the symptoms of hyperopia, and that in simple hyperopia it is possible in a large proportion of cases to prescribe the proper glass without the necessity of subjecting the patient to the inconvenience of paralysis of the accommodation.

One other point deserves attention, viz., the ciliary muscle may have the necessary strength to give the patient the proper accommodation for a limited time to which he is entitled, but its power of endurance is more or less diminished. The term "Accommodative Asthenopia" should be supplied only to such cases, and not as is often done, to an inability of the accommodation to overcome high degrees of hyperopia because in these latter cases the ciliary muscle is not usually in an asthenic condition. It is often stronger and better developed even than in the normal emmetropic eye. To determine whether this muscle has sufficient power and endurance it is necessary to ascertain whether the patient has the proper range of accommodation. If this is sufficiently great to meet all the requirements of ordinary work, we must next determine the endurance of the muscle by requiring the patient to read continually for at least three-fourths (¾) of an hour, holding the book or paper at such a distance from the eyes as will call into action at least two-thirds (2/3) of the total range of accommodation. If the muscle is normal in strength and endurance the patient will meet this test without any inconvenience whatever; but if not, he will soon lay aside his work with the expression that the words seemed blurred after the eyes are used a few minutes. This blurring is simply a relaxation of the ciliary muscle because it has become tired out, allowing the lens to temporarily assume the same shape and position that it would if it were under the influence of a cycloplegic. The muscle has become exhausted and it is impossible for the patient to accommodate at all until it has rested for a longer or shorter time.

This condition is usually found in such patients as are suffering from a general debilitated condition of the system as the result of some disease, malnutrition, or deficient excretion of poisons generated in the body. Their treatment, therefore, should be general as well as local, and while we may prescribe a weak convex glass temporarily for such patients, it is only to assist them until this muscle with the rest of the system has again returned to its normal condition.

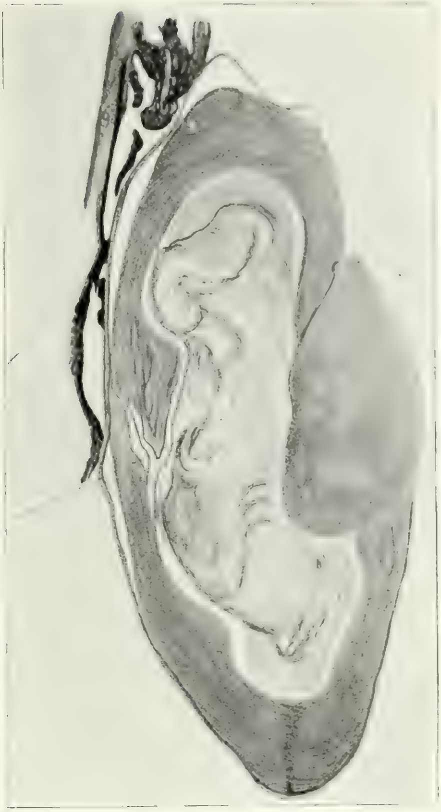
ON THE HISTOLOGY AND ETIOLOGY OF POSTERIOR LENTICONUS.

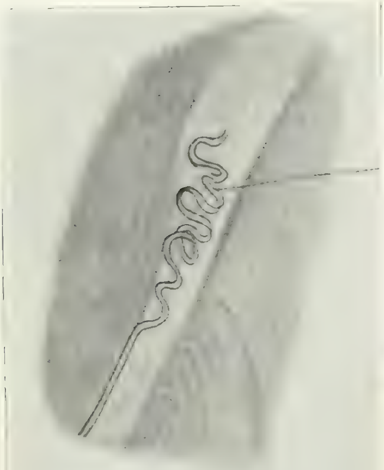
BY R. DENIG, M. D.
NEW YORK.

Illustrated.

In the left eye of a rabbit, presenting total anterior polar cataract, I detected after enucleation a posterior lenticonus. Upon hardening the enucleated eyeball, an equatorial section was made. There were no other anomalies to be found, the usually described persistence of the hyaloid being also absent. The equatorial diameter of the lens was 8 mm., its sagittal being 4 mm. only.

Examining the specimen under the microscope, I found the anterior polar cataract caused by a proliferation throughout the whole extent of the anterior capsule. The nucleus of the lens showed a total degeneration; there was a homogeneous structure to be seen, the fibers swollen, degenerated and scattered irregularly, forming vacuoli. The degenerated nucleus was surrounded by normal cortical fibers, with the exception of its central posterior part, where they were absent; here the lenticonus rested directly upon the degenerated nucleus. The structure of the


Anterior Polar Cataract
Central Cataract
Position where Rupture of the Posterior Capsule occurred
Posterior Lenticonus


The curled up ruptured Posterior Capsule

lenticonus, whose sagittal diameter was 3 mm., consisted of lenticular fibers, showing but little degeneration.

Cases of lenticonus may be divided anatomically into, first, those where a rupture of the posterior capsule has taken place; and, second, where no rupture has occurred. In those cases, where no rupture has taken place, the nucleus either remained undeveloped or, if present, showed a displacement toward the posterior cortex, or rather posterior capsule. The sagittal diameter of the lens in these cases is larger than normal, and we do not expect to find opacities in the posterior cortex, unless there is a complication. Where a rupture of the posterior capsule has taken place, however, we must expect to find the sagittal diameter shorter, and we look for smaller or larger opacities in the posterior or central part of the lens. As regards the nomenclature, more stress should be laid upon this anatomical difference of ruptured or unruptured capsule. The old term of lenticonus should be retained for the cases of ruptured capsule only, while I would propose the term of lentiglobus for the cases of unruptured capsule.

As to the etiology of posterior lenticonus, the persistence of the sheath of the hyaloid has been thought to be the causative factor. It seems to me improbable that traction of the shrinking artery would produce lenticonus. One theory suggests tears in the posterior capsule allowing the vitreous fluid to enter, and does, therefore, not explain cases of lentiglobus where no opacities have been found. Furthermore, an intimate attachment of the arterial sheath to the capsule of the lens must be supposed to exist in all cases, if we recognize this theory. Under the microscope we often cannot detect any remnants showing such intimate attachment. Last, but not least, we see quite a number of cases of hyaloidea persistens without any evidence of posterior lenticonus. On the other hand the occurrence of the hyaloidea persistens does not seem to be merely accidental. It is probable that the lenticonus by hindering the absorption of the hyaloid is sometimes the cause of it, and not its effect. Even if the persistence of the hyaloid is not caused by the lenticonus, it may be an accidental complication, similar to the anterior polar cataract which has been observed in my special case. I wish to lay stress upon the fact that no other case of lenticonus has been published with the complication of a *total* anterior polar cataract, and, in addition, that the anterior polar cataract was in no way connected with the central part of the lens or the lenticonus, but was separated by normal cortical fibers. Referring to an excellent publication of Professor Hess* in Marburg, in

*Von Graefe's Archiv Fuerophthalmologie, vol. xxxix, p. 181

Germany, on a congenital anomaly of the lens of an embryonic hen, it seems probable that abnormalities in the ectoderma in fœtal life may result in pathological changes of the lens, producing, for instance, anterior polar cataract by proliferation of the anterior capsule, posterior or central cataract, by degeneration of the oldest lens fibers, or lentiglobusconus, by an overproduction of lenticular fibers with secondary swelling, which stretches and even ruptures the posterior capsule. With regard to the displacement of the nucleus, observed in cases of lentiglobus, Hess thinks that by changes between posterior capsule and nucleus a lasting approximation of the nucleus with the posterior capsule ensues ; this union is not influenced by the later development of the cortical fibers.

I would like to add that many cases of posterior lenticonus may escape our attention, especially in cases of congenital cataract, which do not permit an opthalmoscopical examination.

As regards the history of lenticonus, the anterior lenticonus was first described by D. Webster, New York, 1875, while the posterior lenticonus was first discovered by Fritz Meyer, 1877. The first thorough anatomical description was furnished by Carl Hess, the earlier publication of Becker being somewhat defective.

Note.—I cannot conclude this article without expressing my sincerest thanks to Professor C. Hess for the kindness in reviewing my specimens and furnishing me with the plates. To Drs. Prudden, Freeborn and Larkin, of the College of Physicians and Surgeons, Columbia University, N. Y., I am indebted for many acts of courtesy in connection with the pursuit of my examinations at the laboratory.

DIABETIC CATARACT WITH A REPORT OF FIVE OPERATIONS.

BY ROBERT L. RANDOLPH, M.D.

BALTIMORE, MD.

According to most writers on the subject, the prognosis in operations for diabetic cataract is relatively unfavorable, and the opinion is widely held that surgical operations in general upon one affected with diabetes are apt to be followed by suppuration. Not so many years ago it was no uncommon thing to find an ophthalmologist who, even if he did not refuse to operate for diabetic cataract, was at least always ready to give a gloomy prognosis.

The following case reported by Gillet de Grandmont fifteen years ago gives us an idea of the state of opinion in Lyons at that time as to the practicability of operating upon diabetic cataracts. The patient was a woman of forty-eight who had been blind for several years with diabetic cataract and who had consulted several of the oculists in Lyons, but they had refused to operate because she was a diabetic. It would seem from the narrative that even de Grandmont hesitated to operate, for it required no little entreaty and even tears to induce him to undertake the case. Practically she was totally blind and she had made up her mind to risk everything to regain her sight. Extraction was performed under cocain. The field of operation and the instruments were irrigated with a solution of bichlorid 1-2000. The lens was quite voluminous, though it passed readily through the wound, which latter comprised half the cornea. The iris replaced itself spontaneously and a biclorid compress 1-2000 was placed on the eye. In conclusion it may be said that what in the beginning looked as though it were going to be an unusually complicated case ended in the most common-place manner with vision 20/20.

In looking over what has been written on this subject by those who flourished forty years ago and over, one will be struck by the fact that there existed some diversity of opinion as to whether there was really such a thing as diabetic cataract. There were some and they were eminent, too, who held that the existence of cataract along with the sugar in the urine was simply a coincidence, and among these were such men as Garrod, Valleix, Gosselin and others, and even Arlt at one time in 1854 expressed some little skepticism as to the propriety of attributing cataract to diabetes. It must be said, however, that even so far back as this, the majority of ophthalmologists recognized the existence of such a condition as diabetic cataract.

While Rollo in 1798 was the first to observe cataract as a complication of diabetes, we owe the first complete description of diabetic cataract to Lécorché in 1851.

It is always interesting to know what von Gräfe's opinion was on a mooted question in ophthalmology, and it is hardly necessary to say that we find his name enrolled among those who believed in diabetic cataract. Indeed von Gräfe went so far as to assert that cataract was to be found in one out of every four diabetics.

Within the last thirty years the question has been settled by an abundance of positive evidence and when we meet with cataract nowadays in a diabetic we are not called upon to speculate as to its etiology. but to study its appearance, its course and its treatment.

This variety of cataract is found in the confirmed diabetic. It runs a rapid course, two or three months usually sufficing for entire opacification of the lens. Cases are reported where the lens has become opaque in a week, and not often does it require so long as a year. The change takes place in both eyes at the same time and as a rule it will be observed that the rate of progress is about the same in both eyes. Practically we never see the opacification commencing in the nucleus of the lens. Usually either the anterior or the posterior cortical substance is first involved as is shown by the streaks which run from the periphery to the center of the lens. When the cataract is complete it is rather voluminous and swollen, which accounts for the slight propulsion forward of the iris, so frequently seen when the subjects are under thirty-five years of age. In cases where the patient is an old person the lens is sclerosed and there is no apparent swelling.

As to the frequency of diabetic cataract the statistics of Galezowski show one case of diabetic cataract in one hundred cataracts, Becker four in a hundred and Oppolzer nine in a hundred. Some, as for instance Oppolzer, think that the cataract only makes its appearance at a late stage of the diabetes, while others, as Dor and Lécorché, are of the opinion that it appears in the early stages of the disease. As observations have multiplied we must conclude that the presence of diabetes is not a contra-indication to the operation for cataract. Sichel, Cousserant and Galezowski have made a number of communications going to show that the presence of glycosuria has no deleterious influence upon the outcome of a cataract operation. Galezowski in thirty-two operations for this variety of cataract, where the amount of sugar in the urine in every case was large, saw only one case of suppuration of the wound, all the other cases giving satisfactory results.

Much of the failure in old times was due no doubt to the large "flap operation" then in vogue, but statistics have changed their note with the advent of the modified linear extraction. And this prompts me to report the results obtained in five operations for diabetic cataract. All of these cases were operated upon in the Johns Hopkins Hospital, the first case five years ago, the second case three years ago, and the last case this fall.

Case I. Mrs. A., 45 years old. She had been under treatment for diabetes for five years. Sugar was still present in the urine. In the right eye were to be seen posterior cortical striations in the lens, but the condition did not explain her poor vision in this eye, for the nucleus was quite transparent. Examination under a mydriatic revealed vitreous opacities and a white disc. In the left eye there was a total cataract. Her vision had grown rapidly worse in the past six months and the left eye which till recently had been the better eye was now blind. This eye was operated upon in the usual manner with iridectomy and she made an uneventful recovery and was out in three weeks. Paleness of the disc was also present in this eye, a condition which was responsible for the poor vision she still had after the cataract had been removed. But for the involvement of the nerve, however, there was every reason to believe that she would have obtained excellent vision.

CASE 2. L. H., railroad conductor, 35 years old. Pale and thin, and the skin of his face was dry and leathery. He had been in bad health for some time, but only knew six months ago that he had diabetes. Previous to this time, however, he had noticed that his vision was failing, and now he had only light perception. Both lenses were opaque and looked exactly like ordinary senile cataracts, possibly they were a little whiter than most senile cataracts. There seemed absolutely no contra-indication for the operation, so the right lens was extracted and two weeks later the left lens. The cataracts seemed ripe, were pale white in color, while the cortical substance, of which there was not a little, was very white. A mild iritis showing itself on the fourth day, followed the operation in the left eye. This necessitated a stay of ten days longer in the hospital, but he left with good vision in both eyes and a few months later I heard he was at work again.

CASE 3. B. T., negro, 35 years old. He had been suffering with diabetes for over a year. His vision began to fail in January, 1898. I saw him early in June and the cataracts were nearly ripe. He could still see some at this time. A month later the opacification was complete in both eyes. On admission to the hospital he had $2\frac{7}{8}\%$ sugar in his urine. He did not complain of thirst and there was no polyuria. The right eye was first operated on and a week later the cataract was removed from the left eye. He also had a mild iritis in his left eye, and left the hospital after a sojourn of six weeks with 20/40 vision in each eye.

In all of these cases iridectomy was performed. As a rule in diabetic cataract (except in the old) a good deal of cortical substance will be found and a big pupil greatly facilitates its removal. This step seems to me very necessary, particularly in such cases as the last two, where I think a simple extraction might have been followed by a closed pupil. Speaking of iritis in connection with the negro it has been my experience after operations upon them to see inflammation of the iris oftener than in similar operations on white patients.

As to the pathogenesis of diabetic cataract, it was supposed by some that the changes in the lens were due to the abstraction of water from the lens. This view, however, is probably not the correct one, for according to Fuchs it has been shown that the amount of sugar in the aqueous of diabetics is much smaller than is necessary in experiments to produce opacity of the lens. I am inclined to agree with Deutschmann in thinking that the change is due to the breaking down or death of the lens cells, analogous to what occurs in the kidney epithelium, and it is this which leads to abnormal processes of diffusion, showing itself in opacity with increased volume of the lens.

The bad results which generally followed the extraction of diabetic cataracts in old times were attributed by the surgeons of that day not only to the diathesis, but, as has been said, to the "flap operation." Sichel is quoted as saying that he had never seen a case of diabetic cataract successfully operated upon by this method. Ignorance of asepsis was probably the most potent factor in bringing about failure. No doubt the tissues of the diabetic are less able to resist successfully bacterial invasion, but in the light of the success which attends operations for diabetic cataract nowadays, it cannot be said that the diathesis appreciably jeopardizes the success of an operation so far as the eye is concerned.

The good vision which is usually secured in this class of cases goes to show that the retina and optic nerve are sound and that diabetic retinitis and diabetic cataract are two separate and distinct affections which, although they have a common origin, rarely co-exist, a fact which for obvious reasons renders the prognosis more favorable. The evidence, then, indicates pretty clearly that the presence of diabetes is no serious contra-indication to the extraction of a cataract.

PULSATING EXOPHTHALMUS FROM ANEURISMAL VARIX IN THE NECK.

BY H. GIFFORD, M.D.

OMAHA, NEB.

The list of cases of traumatic pulsating exophthalmus is already so long that I should not trouble the readers of the RECORD with another had it not some decidedly unusual features.

A. M., aged 43, of Irish descent, came to me February 8, 1898, with the following history: Four years ago was attacked by drunken roughs and knocked down several times by blows upon the left side of the neck. Almost immediately his neck began to swell until it was pushed out nearly even with the chin. It also was much discolored; "as black as your hat," in the patient's phrase. A few hours after this he noticed a churning sound in the left side of his head which has continued ever since. About four weeks later he noticed that the left eye was protruding, and about this time or sooner it turned in and the sight deteriorated. Stat. praes. right eye normal, vision $\frac{20}{30}$, left eye turns in about six lines and cannot be moved outward from this position. It also protrudes about $\frac{1}{8}$ inch further forward than the other eye. By the closest scrutiny it can be seen to move forward and backward, synchronously with the pulse. Otherwise the eye is objectively normal, and although the vision is only $\frac{20}{100}$ when the head is held in the ordinary position, it reaches $\frac{20}{40}+$ when the head is turned to the left so as to allow the central portion of the retina to be used. The veins just below the outer extremity of the eye-brow are somewhat enlarged. No pulsation can be seen in the retinal arteries. In the left side of the neck a pulsating cylindrical tumor extends along the anterior border of the sterno-mastoid muscle from about the level of the upper border of the larynx, where it is largest ($\frac{3}{5}$ inch in diameter), gradually diminishing in size and passing farther from the surface up to the angle of the jaw. A diverticulum from this tumor extends from about its middle a short distance over the anterior border of the sterno-mastoid muscle. This tumor pulsates violently, emitted a loud bruit when the stethoscope is used, and transmits a distinct thrill to the examining finger. Another evidence of the direct injury to the neck is given by the hyoid bone, which is dislocated to the right, where one extremity can plainly be felt, somewhat beyond the border of the sterno-mastoid, while the left extremity can not be felt at all. The bruit seems loudest about an inch above the lower extremity of the tumor, but it can be heard when the stethoscope is applied to any part of the cranium or to the left eye (I think it could be heard slightly over the right eye, but am not sure of this). The patient is not troubled much by the noise in the head, the tumor is not increasing, and his main complaint is that he feels too weak to do any steady work.

I think there can be no doubt that in this case the exophthalmus and paresis of the abducens have not, as is usual, been produced by a rupture of the artery within the cranial or the orbital cavity, but by the increased pressure in the cranial sinuses, resulting from the aneurism of the neck, the pressure being transmitted through the petrosal sinuses to the cavernous sinus. If this is so, the case is unique so far as I can learn. Of the 106 cases collected by Sattler in Graefe-Saemisch, four resulted from blows with the fist, in two of them the blow falling upon the face or head, in the other two upon the nape of the neck. In none of these was there any evidence of aneurism outside of the orbital or cranial cavities: neither can I find any indication of any such case in the excellent thesis of Keller (*Inaug. Diss.* Zurich, 1898), where 118 cases reported since the publications of Sattler's Monograph are collected; nor in the abstract of Stomann's Monograph, (*Archiv. f. Augenheilk,* XXXVIII 2, Syst.; *Bericht für Augenheilk,* 1888, p. 88). It is, of course, not impossible that beside the aneurism in the neck, this man may have one within the cranium, but considering that he does not remember striking his head at all hard when he was knocked down, this supposition seems rather gratuitous in view of the lesions plainly existing in the neck.

The lesion causes the patient so little inconvenience, comparatively, that it is a question whether any operative interference is justifiable. He has become accustomed to the noise in the head, the tumor in the neck has remained of the same size for years, and if it were not for a general lassitude he would have nothing to complain of except the disfigurement. On the other hand, if, as the surgeons who have examined the case think, the tumor in the neck is an aneurismal varix, it might be possible, by tying the internal jugular high up, to relieve the head symptoms without resorting to the more dangerous plan of tying the carotid; but I have not felt like urging even this.

KERATITIS ULCERATIVA MARGINALIS.

BY W. A. MARTIN, M.D.
SAN FRANCISCO, CAL.

Under this head I wish to call attention to a certain form of ulceration of the cornea which I have not found described accurately in any of the literature at my disposal. As yet I have hardly seen a sufficient number of cases to render it positively necessary to adopt a specific classification for this variety of keratitis. During the past year I have seen but three cases which were typical of the trouble here described, but during the past several years I have seen occasional cases which I have not followed accurately and of which I made no further notes than to enter them in my book as corneal ulcers.

Those having a larger amount of clinical material under their observation, if they have not already noted this peculiar form of ulceration, will, no doubt, soon meet with cases corresponding to those which I shall describe.

The first indication of the trouble is a pericorneal injection, followed by photophobia more or less intense. This stage may last several days or even longer. Following this, one will observe around the margin of the cornea about the line of the arcus senilis and the same distance from the corneal margin a row of small papillæ, some of them broken down and still later becoming confluent and forming long narrow ulcers. I have seen such a line of ulcers almost encircling the cornea. With the proper remedies they disappear quickly.

It is the preliminary stage, however, that puzzles one; in each instance I have looked carefully for a foreign body lodged on the cornea and prescribed a simple collyria, but the only relief afforded was a tight shade to exclude the light from the eye, which relieved the photophobia the most distressing symptom. After the appearance of the ulceration, calomel or bichloride solution quickly brought the process to a termination. So far as I have observed the trouble is confined to adults. The three cases herewith reported occurred in parties between forty and fifty years of age. Whether there is a direct connection between the ulcerative process and the arcus senilis along which line one might say it seems to travel, is a subject for future investigation.

Case 1: Mr. B——, a police officer whose beat is in Chinatown, came to me complaining of photophobia. Examination revealed nothing except a light pericorneal injection. I examined for a foreign body on the cornea, but finding none I ordered a borax-camphor wash and a shade to protect the eye. He returned the following day, but again I failed to discover anything to account for the stormy symptoms. A one percent solution of cocain relieved the pain for the time being. This state continued for about a week before I discovered a number of small ulcers that were situated about one millimeter from the sclero-corneal margin; a day or two later they were more numerous and some of them confluent. I dusted the eye with calomel and prescribed bichloride solution (1-7500), and in a few days they had disappeared completely. There was a recurrence in this case a couple of months later.

Case 2: Mrs. W——. Aet. 52, I first saw last February. She had been complaining of the eye for several weeks and had shut herself in a perfectly dark room and held a pillow over the eyes during the day. I insisted on letting in the daylight, but it was a week before she was able to come to my office. The eyes, as far as I could discover, were normal, and the treatment pursued was principally suggestive, as I believed at the time that the trouble was hysterical. In October she returned to my office and stated that she felt the same trouble recurring. I discovered nothing but a light pericorneal injection in one of the eyes. I prescribed for her and had her return two days later. At this visit there was a slight chemosis in each eye, but nothing further. The following day, however, I discovered a number of pin-point ulcers in each eye and a chain of small papillæ on the line of the arcus senilis, which in her case was well marked; some of the ulcers became confluent before checked by treatment, but the whole process came to an end in three or four days under the calomel and bichloride treatment.

CASE 3: John C——, Aet. 57 years. I treated this patient for three weeks for what I considered a conjunctivitis. There was no refractive error, but he complained continually of severe pain in the eyes when in the light and wore dark glasses constantly. I finally discovered small ulcers near the margin of the cornea as in the previous two cases, and with the same treatment he quickly recovered.

In the last case there was a history of lues and a strong probability in the second, but in the first there was absolutely no signs of a specific nature. I made no cultures; but from the rapid recoveries under the mercurial applications there is a strong probability that it is of an infectious nature. The most similar trouble I find in the literature is the "Keratitis Punctata Superficialis" of Fuchs. This, however, is found mostly in young people and is diffuse, while the trouble I have described is found in adults and does not encroach on the center of the cornea.

Spring Valley Building.

ANGIO-NEUROTIC ŒDEMA OF THE CONJUNCTIVA.

BY ALEXANDER DUANE, M.D.

NEW YORK.

Terson (*Clinique ophtalmologique*, Jan. 10, 1899) reports a case of intense unilateral chemosis, which developed suddenly, was unattended by pain, increased secretion, or other evidences of inflammation, and disappeared completely in two days. In the discussion, Jocqs reported a similar case, which, however, was bilateral.

The transitory character of these cases and the absence of any impairment of motility, exophthalmus, or pain preclude the idea of any superficial or deep inflammation being accountable for the œdema. The latter is in all probability simply an example of the angio-neurotic œdema that we see now and then upon the lids, cheeks, or other portions of the exterior of the body, and also upon the mucous surfaces.

In some cases which are surely to be ranged in the same category, the condition is one of hyperæmia rather than of œdema, and is accordingly much more transient. Of these cases which have been described by several French authors, and which was called by Thuilliez (cited by

Terson) "conjunctival urticaria," the following is an example that I observed in February, 1898:

Mary C. G., aged 8, under treatment for three weeks. Symptoms, asthenopia dolens and a slight, but pretty obstinate conjunctival catarrh. Hy. 1.25 D with a moderate amount of astigmatism with the rule. Muscles normal. Treatment: Correction of refraction (determined under full cycloplegia), and the instillation successively of sublimate 1-5,000, which did not work well, boric acid, which largely relieved the congestion, and latterly zinc sulphate 1-250.

To-day without any connection with the instillation and without any other apparent cause, sudden, painless access of congestion of palpebral and to a less extent of the bulbar conjunctiva, attended with swelling of fornix and with marked active hyperæmia or fixed "blush" on each cheek just below the eyelid. Attack lasted half an hour, when the congestion, swelling, and blush disappeared. No recurrences during the two weeks that the patient remained under observation.

DIVERGENT STRABISMUS CURED BY CORRECTION OF MYOPIA.

BY ALEXANDER DUANE, M.D.

NEW YORK.

While most text-books upon ophthalmology[1] speak of the great utility of concave glasses in the treatment of the exophoria and even of incipient divergent squint, occurring in myopes, there are few, if any, positive declarations as to their utility in well-established cases of strabismus. The few positive utterances, in fact, are rather to the effect that cases of this sort are never relieved except by an operation.[2] Hence, it may be of some interest to cite a case in divergent strabismus, in which the deviation was pronounced, was constant, and was of long standing, and yet was relieved by correction of the refraction combined with exercise of the squinting eye.

Mary M., age 11, consulted me at the Vanderbilt Clinic, May 16, 1894. Left divergent strabismus of 2 to 3 lines. Said to have existed for seven years. Near-sightedness noticed ever since child first went to school.

May 16, V. R. wi.—6 D $\frac{20}{70}$; L. wi. −11 D $\frac{20}{100}$. Same under homatropine. Marked, sharply defined temporal crescents both eyes. Fundi otherwise practically normal. Ordered—6 D each, and to practice systematic occlusion of right eye.

July 11, V. R. $\frac{20}{40}$; L. $\frac{20}{200}$ with glass. But very little strabismus with glasses, and only slight deviation out behind screen either for distance or near; and, although left eye tends to wander off in performing convergence, patient can by an effort converge to within 4 inches of the eye. Treatment continued.

Sept. 5, as on July 11. It is now occasionally possible to make the patient recognize the existence of crossed diplopia by the aid of the red glass or of prisms.

Oct. 17. With glasses condition as on July 11, but correction of deviation even more evident. Patient reads well with glasses. Without glasses wide divergence.

In this case while we may doubt that the deviation had lasted as long as alleged, namely seven years, it was evidently of several years duration at least. Moreover, it was constant; was uniocular (being confined to the left eye), and had got to be considerable in amount (5–6 mm. = 25° of arc). Nevertheless, it was readily and speedily relieved by treatment with glasses.

[1] Noyes; Norris and Oliver; Swanzy; de Schweinitz. Nettleship and Fick apparently do not refer to treatment by glasses.

[2] Fuchs 7th Ger. (2d. Am. Ed.)

FOR REMOVAL OF WARTS OF THE LID.

BY ALMON BROOKS, M.D.

OF CHICAGO.

There is no remedy equal to that of fuming nitric acid, especially when applied on a toothpick or sharpened match.

The growth is first denuded of its epithelial layer by means of a very sharp knife, when the sharp point of the stick carrying the acid is placed as nearly as possible in the center of the wart, and a boring motion imparted by rolling the stick between the thumb and forefinger. As soon as a smarting sensation is felt the application must be discontinued for that occasion. The process must be repeated (after three or four days), although two applications are usually sufficient when the papilloma is not large.

The advantages of this method are painlessness, the absence of disfiguration during the treatment, interruption of the usual occupation, and the recovery without a scar and usually without leaving a trace of its former site.

It differs from the ordinary application of nitric acid in that the papilloma slowly shrinks and disappears, and is not merely burned away, as in the usual plan of dealing with such growths.

DIAGNOSTIC SIGNIFICANCE OF ONE-SIDED AMBLYOPIA WITHOUT OPHTHALMOSCOPIC LESIONS.*

BY H. GRADLE, M.D.,

OF CHICAGO.

It is often a difficult problem to determine the cause of a one-sided reduction of sight not dependent upon intra-ocular disease. In order to illustrate these difficulties I wish to present the histories of some obscure cases and view them in the light of more decisive observations in my experience. The first inquiry in such cases must be whether the dimness observed by the patient is really a recent or progressive failure of sight and not a stationary old amblyopia, as it is often found in strabismic eyes or less often in the more ametropic eye of anisometropia, even when no squint exists. Not uncommonly a patient does not know that one eye is inferior to the other until tested by the oculist. On the other hand, I can recall at least one instance where a young man became alarmed because he had recently learned by shutting one eye that his other eye was poor,—there being V=20/100 in consequence of a high degree of hypermetropia, which remained unchanged under an observation of some months. Before placing a case in the category to be now discussed it is also necessary to exclude certain delicate and not fully understood changes in the center of the retina which sometimes require pupillary dilatation and considerable skill in the use of the ophthalmoscope for their recognition.

1. One-sided failure of sight without intraocular disease is either due to a lesion of the optic nerve between chiasm and eyeball or is functional – in other words of psychic origin. The latter condition has been observed relatively often in hysterical patients. I will not quote the extensive literature on this subject, but will refer for details to the *Traite de L'hysterie*, by Giles de La Tourette (1891, Part 1, Chaps. 8 and 9). The typical cases occur in distinctly hysterical subjects and vary from dimness of sight to absolute blindness. As a rule the patient is not annoyed by this condition if one-sided, perhaps not even conscious of it. The field of vision is almost always concentrically restricted for white and for colors, though to a variable extent in different cases and as a rule the color-fields are reversed, i. e., the limit for blue narrower than for red. The field is

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*Read before the Chicago Ophthalmological Society, March, 1899.

often limited in both eyes, although central vision may be reduced only in one. In no case of this description in literature or in my experience was there any interference with the reaction of the pupil to light even in an alleged blind eye. There is no tenderness in the orbit except when suggested to the patient by a traumatic history. The diagnosis is suggested by finding hysterical stigmata and made certain when anæsthesia of the lids or conjunctiva can be demonstrated. In doubtful cases it can be made absolute only by removing the blindness by purely psychic influences, no matter how long it may have existed. I will not take up time by citing typical cases, but will report two instances of moderate amblyopia in which the diagnosis was not at once suggested by the history.

Case 1.—Mr. H., a laborer, aged 51 years, wanted an examination for pension purposes. He claims to have had a fall from a stage coach twenty-six years ago, and that ever since then his right eye was of little use to him. It is not quite clear whether there was formerly diplopia. Since a few years ago he claims to have increasing dimness of the right eye. The left eye is objectively normal in every way. The right eye shows absolute paralysis of the superior rectus and of the sphincter muscle of the iris. No intra-ocular anomaly and approximate E. V=20/80, improved by convex 1D to 20/50, but still he calls his sight dim. Reading with +3.5 is difficult but possible. His left eye has more than 20/30 V. But the field, much restricted in the right eye, (especially on the temporal side, where it only reaches 20°) is also concentrically restricted in his left eye, which he considers normal. The limits for colors in the horizontal meridian are (in degrees):

		Green.	Red.	Blue.	
R. E.	Outward	5	8	5	Blue appears green to the R. E.
	Inward	5	10	5	
L. E.	Outward	45	50	15	
	Inward	12	22	10	

While the peculiar reversed and restricted color-fields of both eyes, and the ophthalmoscopic integrity with the long persistence of the dimness suggested a hysterical amblyopia engrafted upon an organic lesion of fibers of the third nerve, perhaps of traumatic origin, the diagnosis was made positive by finding an incomplete anæsthesia to touch and to pain on the right side of the whole face including the lids and surface of the eye, of which anæsthesia the man had not been aware. There was also diminution of smell and taste on the right side.

Case 2.—Mr. R., a salesman, 35 years old, claims that his eyes had been in satisfactory state until within the past six weeks. Six months ago he had gonorrhœa, afterward rheumatism of the ankle, but is now cured. Since six weeks he noticed an occasional blurring, at first only in reading, later on, too, in distant vision, and he thinks that his right eye is at fault wholly or at least much more than the left. At least three weeks, but probably longer, his lids have troubled him, especially on the right side, and the trouble is increasing.

The left eye is objectively normal, except for a slight chronic conjunctivitis. $V=20/35$, with cyl. $+0.5$ axis $90^\circ=20/20$. The right eye shows considerable acute inflammatory swelling of the edge of the upper lid, with pronounced catarrhal conjunctivitis, but with very scant secretion. Eyeball pale, pupil, media and fundus normal. $V=$ only $20/80$, not improved by any glass. Near point about eight inches for either eye. Field for white and colors normal and no scotoma.

The cause of the dimness in the right eye was not clear. Careful testing showed that it was not due to mucus floating on the cornea or to regular astigmatism. There were no symptoms suggesting any disease of the optic nerve. Neither the history nor physical examination pointed to hysteria. But there was an emotional display in the man's answers to questions and an exaggerated anxiety in his manner that—together with the enfeebled accommodation—made me suspect that his amblyopia might be of psychic origin, perhaps induced by the pressure exerted by the inflamed lid upon the cornea. Accordingly I gave him as positive a promise regarding the recovery of sight as seemed warranted, and confined the treatment to local applications for the inflammation of the edge of the lid and conjunctiva (nitrate of silver, zinc sulphate solution, Credé's ointment of soluble silver.) Three days later the external condition had improved without the formation of the stye which I had expected. His sight seemed clearer to him, but was objectively not changed. Field normal, even for colors. On the seventh day the lid was practically well, and on testing him on V was found 20/25 in the right eye, and the accommodation in both eyes improved so as to enable him to read without fatigue. When seen a few weeks later he was found normal in every respect.

2. The most frequent organic lesion causing one-sided amblyopia is inflammation of the orbital portion of the optic nerve—the so-called retro-bulbar neuritis. This is usually not accompanied by visible intraocular changes, although sometimes slight obscuration of the papillary contours can be observed. If it does not end in recovery, partial atrophy becomes visible at a later period. I cannot admit the correctness of the

usual distinction between acute and chronic retro-bulbar neuritis if we refer to one-sided instances. The cases vary, of course, somewhat in the suddenness of onset, but *one-sided* cases are never chronic in the sense of being absolutely stationary for long periods of time. They either recover after the climax is passed, or terminate in atrophy. They differ in this respect from the strictly bilateral chronic disease of the optic nerves caused by toxic influences. The period of recovery may, however, extend through two to four months.

In this disease a central scotoma, especially for colors, is almost always demonstrable. A few times when I could not discover a relative central scotoma during the height of the disease, I found it possible to detect it during recovery. In other words, the morbid process persisted longer in the fibers supplying the center of the retina than in those distributed to the periphery. In the so-called fulminating retro-bulbar neuritis with apparently complete blindness Greef (Berliner klin Wochenschrift. No. 40, 1898) has found in four cases a very narrow ring sensitive to light in the extreme periphery of the field; in other words, an absolute scotoma reaching not quite to the limits of the visual field. I have seen, however, a few instances in which the diagnosis of retro-bulbar neuritis was confirmed by all other symptoms as well as by the whole course, but in which no scotoma could ever be detected. The localization of the morbid process in the nerve may possibly vary with the etiology. There was, however, usually no constriction of the field, at least when tested with a light. In one case only was the visual field contracted, especially on the nasal side, but only during the height of the disease.

In retro-bulbar neuritis the reaction of the pupil is interfered with in proportion to the amblyopia in every instance. Careful comparison of the two eyes showed some difference invariably, though sometimes only minimal. In this disease there is always distinct though perhaps but slight tenderness to pressure upon the eyeball during the first few days. In some cases the patient complained of pain on turning the eye. Often, but not always, have I observed unilateral headache at the onset. Occasionally there was a rise of temperature of about 1° F. The diagnosis, usually not obscure, is made positive by the tenderness to pressure or the demonstration of a central scotoma.

3. Much more obscure is the clinical diagnosis of neuritis or perineuritis of the intracranial portion of the optic nerve, the part between chiasm and optic canal. The only definite anatomical evidence of isolated disease of the part of the nerve tract has been found in syphilis of the brain and is discussed fully by Uhthoff in his exhaustive review of visual dis-

turbances in cerebral syphilis. (Graefe's *Archiv f. Ophth.* Vol. 39, ii. p. 88, etc.) In seventeen autopsies with microscopic examination of the entire optic nerves he found several instances in which inflammation of the nerve or of its pial sheath was limited to the intracranial portion and did not extend beyond the optic canal—the orbital part, and, of course, also the intraocular end being normal. These were all instances of fatal and hence severe syphilitic disease, and while the nerves were mostly involved in a diffuse inflammatory or gummatous lesion at the base of the brain, there were two instances in which the optic nerves were the only seat of a basal lesion. While the disease involved both optic nerves in all of Uhthoff's cases, the lesions were by no means symmetrical in extent and it is hence to be expected that in less severe instances, the process might be one-sided. Uhthoff analyzes the reports of 150 autopsies in cerebral syphilis in literature and finds similar occurrences mentioned in some, although none were as systematically examined in this respect as his own. Whether such a localized inflammation of the intracranial part of the optic nerve has ever been found in non-syphilitic diseases, I have not been able to learn. The clinical aspect of this circumscribed neuritis I have not seen mentioned in literature except by Uhthoff in his clinical comments on these cases and in a vague manner by Deyl in his chapter on the optic nerve in Norris and Oliver's *System of Diseases of the Eye.*

My own attention to the possible occurrence of this affection was first aroused by the study of several instances of paralysis of ocular muscles due to syphilis. In four cases of this kind the patients had imperfect vision when first seen, but their sight soon became normal under specific treatment. Twice the lowered vision was monocular, while in two instances it was bilateral, although in one of these the motor palsy (III nerve) pertained only to one side. The lowered vision, reduced to less than 20/30 or even 20/50 did not disturb the patients, a fact all the more striking in one whom I had one year previously fitted with glasses and whose vision was normal at that time. There was no scotoma or restriction of the field in any of the patients, no pupillary disturbance and no intraocular disease. In the light of Uhthoff's autopsies it seems a safe assumption to attribute the transient lowering of vision to a localized neuritis of the intracranial part of the optic nerve in cases in which an ocular palsy points to a syphilitic lesion at the base of the brain, all the more so when persistent headache suggests a basilar meningitis. In the following two cases, however, there were no other symptoms to confirm the diagnosis. In neither of them was syphilis demonstrable beyond doubt. Yet the transient and gradually disappearing amblyopia, without characteristic changes in the visual field, with remarkably little disturbance of pupillary reaction, seems to me to conform better with the diagnosis of neuritis of the intracranial part of the optic nerve than with any other diagnostic hypothesis. It is quite striking that both of these patients recovered perfect sight much more rapidly than is ordinarily observed in typical retrobulbar neuritis.

Case 3.—Mrs. B., widow, 36 years old, has a neurotic family history. Her sister had typical tabes. She is in fair health and has neither a specific history nor presents any indications of syphilis. Eight years ago she had a spell of transient blindness of the right eye lasting a few weeks. Her menses, expected about the first of this month, were delayed without known cause until the 12th, since which time (two weeks ago) she has had a diffuse headache with pain in the eyes, especially the left. Headache and pain are now diminishing. The sight, formerly natural, has become dim in the left eye. She claims to see double on threading a needle.

The eyes are normal externally. There is some doubtful tenderness of the left eye to pressure. Pupils absolutely normal and both alike. Fundus normal in both eyes. In the left eye the arteries and veins of the retina are more tortuous than in the right.

R. E. V=20/30; field normal; color zones nearly if not quite of normal extent. Accommodation difficult at seven inches.

L. E. V=20/100; field normal; colors not recognized; no scotoma.

There was no disturbance of any of the muscles and no spontaneous diplopia under any tests for binocular vision.

While the patient presented no symptoms of any nervous disease except the visual disturbance, her knee jerks were totally absent even on reinforcement. Even in the absence of all ataxia or vertigo or sensory disturbances the Westphal symptom in connection with the tabetic history of her sister suggested the possibility of tabes. She was placed upon iodide in increasing doses, taking finally 2.0 three times daily.

Two days later V. was the same, but colors became dimly recognizable. The headache had ceased. On the fourth day V. of the right eye was 20/60. On the eighth day V. had reached not quite 20/30, but reading with the right eye was still very difficult, even with convex glasses. There were no new objective appearances. At the end of two weeks the R. E. had V=20/20; the left 20/25. The accommodation was normal and the patient seemed well. Four months later she was still entirely well.

The rapid improvement makes it more than doubtful whether the treatment with iodide was responsible for the result. Indeed the headache had begun to decline before she was under treatment. While the patient's emotional condition suggested hysteria no stigmata were found and the integrity of the visual field which was tested repeatedly with white and colors, as well as her right-sided headache, speak rather against hysteria.

The lesion seems to me to have been a mild neuritis of the intracranial portion analogous to the transient affection of the motor nerves of the eye in the early stages of tabes.

Case 4.—Mr. C. H. has been under my observation off and on since 1887. He complained formerly of spells of vertigo and more or less dull headache, presumably due to constipation and relieved by attention to the latter. His vision was normal, but he had used with benefit a convex glass of 1 D mainly for near work. Even with his hypermetropia thus corrected he has always had imperfect accommodative power, the near point (with correction) receding gradually to 12 inches in 1898 (at the age of 45 years). In June, 1898, his asthenopia induced me to re-examine the eyes, when I found his H now reduced to 0, 5 D, but with As. H 0, 5 D, against the rule, correction of which gave him perfect vision. For work he accepted at that time 1.25 with cyl. +0.5 axis 0. June 28th he reported himself as satisfied, except for slight headache in the morning, which disappeared after taking calomel. July 13, 1898, he returned, having discovered that morning that the sight of his right eye was very dim. He had had no other symptoms.

The following history was now elicited: In his seventeenth year he suffered from a doubtful sore for which he received internal medication for several months. Since then he has had no evidence of syphilis and has healthy children. As I had previously known, he has always been nervous, suffering at times from more or less dull headache and spells of dizziness, apparently due to the condition of his bowels. He is a moderate smoker and does not drink. Two years ago he had a sudden attack of incomplete aphasia lasting twenty-four hours without any other symptoms. A few months ago the same accident repeated itself for the same length of time. Since about one year his virile power has considerably diminished.

The left eye is normal, V = 20/20 (corrected); P. P. = 12 inches. The right eye is absolutely normal externally and internally, not tender and the pupillary reaction perfect; vision reduced to 20/100; no scotoma; field for white normal; for red normal; for blue somewhat restricted and about the same as for red, while for green it is very much restricted, the color being scarcely recognized. No diplopia could be obtained with prisms;

no anæsthesia or other hysterical stigmata could be found; knee-jerks normal. He was given a dose of calomel.

Two days later condition unchanged. He was now put on large doses of salicylate of sodium. On the sixth day the right pupil was unmistakably a trifle more sluggish than the left in reaction and wider than the left when the other eye was closed; vision perhaps a trifle better.

He continued taking salicylate not quite regularly until on the 12th day his vision had risen to 20/60. There was still a slight difference between the pupils, both, however, being less sensitive to light than normal.

For another week he took the same drug irregularly, but in spite of it his sight failed again and had now fallen to 20/200. Still no scotoma; field normal; colors scarcely perceived; pupil as before. Repeatedly he had been examined with dilated pupil and the fundus found normal. A blister put on the right temple had no effect upon the sight. On August 1st (the eighteenth day) the sight of the right eye was barely ∞. The field now was reduced concentrically. The pupil was nearly immobile and slightly dilated. He was sent to Dr. Patrick for examination, who found no evidence of any other nervous disease. He was now placed upon increasing doses of iodide.

Eleven days later vision had risen to 20/200; F had become nearly normal; colors were dimly perceived centrally, and the right pupil showed slight reaction, the left being also still noticeably sluggish. Two weeks later, on the 25th of August, the right eye had regained 20/20 and was perfect objectively and functional in every way and has since remained so.

In this case the uncertain history of infection twenty-eight years ago, as well as the prompt reaction to iodide render the existence of a specific neuritis very probable. The integrity of the left eye shows that the disease must have been peripheral to the chiasm, while the normal state of the disc, the absence of tenderness, the absence of any scotoma exclude involvement of the ocular end of the nerve and presumably, too, of the orbital portion. The moderate improvement occurring during the second week under the use of salicylate of sodium does not speak against this view, as this agent has often an unmistakable, even though transient influence upon various forms of inflammation. Besides, it is well known that the degree of paralysis caused by non-destructive syphilitic nerve lesions is subject to fluctuation. The only other symptoms of this patient, the loss of virility and the two transient attacks of aphasia, are not sufficient to make a definite diagnosis, but they suggest incipient nervous disease. As far as I have been able to learn, no further disturbances have occurred within the next half year.

4. In one-sided amblyopia without intra-ocular lesion, the question of incipient optic atrophy may also require consideration, although as a rule this affection can be recognized ophthalmoscopically from its beginning. But it must not be forgotten that a descending atrophy requires a certain length of time to reach the intraocular end. The most conclusive cases bearing on this question are injuries to the optic nerve, especially those due to traumatic fracture of the optic canal. In a case of this kind, which I had opportunity to study continuously, there were no differences between the papilla of the normal and of the blind eye visible until the twentieth day, when the discoloration became unmistakable, proceeding thence gradually to well-defined atrophy. Yet from a diagnostic point of view, it may be admitted that no sudden injury to the continuity of the optic nerve is likely to occur except under circumstances which by themselves would establish the diagnosis. But that a primary atrophy—one-sided in the first place—may embarrass the diagnostician by reducing sight before producing unmistakable ophthalmoscopic appearances is illustrated by the following obscure observation:

Case 5.—Mr. K., a traveling agent of 28 years, in good health and with negative personal history, claims that in January, 1898, he was dazzled by snow and that his eyes have watered and been somewhat sensitive ever since that time. His right eye has been weaker than the left since then, and within the past two weeks he has been practically blind in that eye.

Aug. 18, 1898, he presented himself apparently in good health with none but ocular symptoms. Knee-jerks normal. Urine normal. Both eyes normal externally. No gross muscular lesion. Both pupils normal, the right a mere trifle less sensitive to light than the left. Ophthalmoscopically nothing morbid, only slight pallor of the temporal quadrant of he disc, in the right eye more pronounced than in the left. But the appearance of the right disc was not different from what is often seen in perfectly normal eyes. There were no appearances of atrophy, merely enough pallor to raise a suspicion of incipient atrophy. Yet that eye was practically blind. Movements of the hand were only seen at less than eight feet distance. The field measurable only by large objects or by a light was slightly narrowed and a large upward sector of the field entirely blind. Colors were scarcely recognizable.

The left eye was subjectively normal V=20/30, but with —0.5 axis 90° V=20/20. Field perfect for white and colors.

There was a striking incongruence between the objective findings and the visual impairment. The nearly perfect reaction of the pupil and the practically normal intraocular appearance seemed to exclude any serious nerve lesion and yet V, was not much more than ∞. No objective proofs of hysteria could be found, nor was any exaggeration of his ailment made probable by tests with prisms and other attempts to discover "ignored" or "denied" sight. The most positive symptom pointing to disease of the optic nerve was the total blindness of the superior sector of the field.

He was put upon iodide of potassium in increasing doses, but without benefit. He claimed that the drug gave him a right-sided headache, which he had not had hitherto. Nevertheless he took it up to 4.00 three times a day for about one month. Strychnia was also given in large doses without result. As he kept on traveling he was only seen at intervals. September 12th the sight was found barely more than ∞. The blind sector had enlarged and yet the pupillary reaction was still quite decisive, though feebler than in the other eye. The diagnosis of incipient atrophy was not yet beyond doubt according to the appearance of the disc. Two weeks later, however, the atrophy of the nerve was unmistakable ophthalmoscopically. Even recently, six months after the first observation, the ophthalmoscopic appearance of atrophy might be compatible with moderate vision, the pupil is not yet quite insensitive to light, especially when this is held downward or toward the nasal side, while the sight in what is left of the field is but dimly quantitative. There is some reason for fear in this case that the atrophy may involve the other nerve. Its suspicious pallor had become perhaps a trifle more pronounced. Central vision and the field for white are still intact, but at the upper and outer limit the recognition of green is now a trifle uncertain.

While attention to the existence or absence of tenderness, the presence or absence of headache, the state of the pupil, the form of the field for white and colors at the periphery and in its center and especially the careful study of the field of the other eye, as well as the consideration of any other existing symptoms of nervous disease, will usually lead to a diagnosis even in obscure cases, continuous observation during the course of the affection may be required for certainty. Even with all these aids the diagnosis can sometimes not be established beyond doubt. For instance, I do not consider the diagnosis in cases two and three absolutely certain. Once in a while, however, the diagnosis must be left entirely open as in the following singular observation:

Case 6.—Dr. M., a physician, 27 years old, of healthy antecedents, had his eye examined some years ago on account of slight irritability. He was advised to wear a +1 for work, which he did with comfort. He was not aware of any difference between the two eyes and has used the left for microscopic work. Without any provocation he noticed one day dimness of the left eye, especially on threading surgical needles. Alarmed thereby, he instilled atropin. Two days later there was no change and he now used atropin in his sound right eye. Four days after this he called and I found objective conditions absolutely normal, both pupils atropinized.

R. E. V=20/100, with +1 and cyl. +0.75 vertical V=20/20.

L. E. V=20/200, with +1.25 and cyl. +0.75 vertical V=20/100.

Field normal for white and colors. No scotoma.

That the sight of the left eye was really as poor as stated subjectively was shown by the impossibility to provoke diplopia with prisms and the absence of compensatory movements under prisms. Two days later condition unchanged.

Reassured that there was no intraocular disease and finding steady improvement from now on, Dr. M. did not return again. In about three weeks all annoyance had ceased. Yet the left eye is not quite normal, for when he uses it long, the sight, fairly good at first, soon becomes unsteady. I re-examined him six months after the occurrence and found pupils and fundus normal on both sides, right eye vision as before, but with H, latent.

L. E. V nearly 20/30, but fading to 20/40 on fixation. With Cyl. +05 V=20/30 was maintained fairly steadily.

The field is perfect for white and colors and there is no scotoma.

YELLOW OXID OF MERCURY SALVE.—This salve is decomposed not only by the light, but also by the action of the fatty acids developed as the fats become rancid. Schanz therefore recommends the following formula to avoid decomposition: Yellow oxid of mercury, recently prepared, .01 to .05 gm., lanolin and aq. dest., āā 2 gms.; vaselin, q.s. for 10 gm. Sig. In black glass.—*Nouveaux Remèdes*, 1899, No. 2.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, APRIL, 1899. No. 4. NEW SERIES.

EDITORIALS.

CAUSE OF TILTING HEAD TOWARD ONE SHOULDER.

It has long been a matter of observation that some people, without any desire to put on airs, carry the head tilted toward one shoulder. Stevens first pointed out the fact that these were hyperphorics, and that the head was tilted toward the opposite side, i. e., toward the shoulder corresponding to the cataphoric eye. Stevens and others who have written about this phenomenon, have said that reason would suggest a tilting towards the hyperphoric eye, but that, in this instance, the fact stood opposed to the reasoning. All agree that the patient is helped by the tilting, else the habit would never have been established. Hansell and Reber, in their recent book on Muscle Anomalies, offer an explanation which does not explain. These are their words:

"The head is usually tilted toward the shoulder opposite to the hyperphoric eye, a statement that may sound strange, but when it is remembered that in right hyperphoria the image is really seen lower by the right eye, it naturally follows that the head must be tilted toward the left shoulder if the images are to be brought to a level and binocular vision thus rendered an unconscious act."

In binocular fixation the object as seen by one eye is not lower than the same object seen by the other eye, else there would be diplopia which would contradict binocular fixation. There is a tendency toward diplopia as the word hyperphoria (an upward tending of the eye, a downward tending of the object seen) indicates. It is to counteract or lessen this tendency to diplopia that this tilting takes place.

All hyperphorics do not tilt the head toward the cataphoric side, many walking with head erect, while some tilt the head toward the hyperphoric side. If counteracting this tendency has to be effected alone by the inferior rectus of the hyperphoric eye and the superior rectus of the cataphoric eye, these would be hindered and not helped by carrying the head toward the cataphoric side; but they would be helped, that is, could oppose more easily their stronger antagonists,—by tilting the head toward the hyperphoric side. Help does come from tilting the head toward the cataphoric eye, but in what cases and how? In every case of persistent tilting of the head toward the cataphoric side there is more or less marked insufficiency of the superior obliques (Savage), latent plus torsion (Maddox), plus declination (Stevens), complicating the hyperphoria. In these cases, and these only, the tilting of the head is helpful. The hyperphoric eye elevated, the weak inferior rectus is helped in its effort to bring the visual axis down to the object of fixation by the superior oblique muscle, which, as is well known, is a depressor of the anterior pole of the eye by means of elevating the posterior pole. The posterior pole of the eye elevated, the torsional power of the superior oblique is greatly augmented.* This being more than enough to counteract the plus torsional effect of the acting weak inferior rectus, tilts the naturally vertical meridian of this eye toward the nose (minus torsion or declination). The cataphoric eye made lower by the peculiar tilting of the head must have its visual axis elevated by the contracting of the weak superior rectus, aided by the strong inferior oblique, whose torsional power, though lessened by position (elevated posterior pole), is still more than enough to counteract the minus torsional effect of contraction of the weak superior rectus, and the naturally vertical meridian of this eye is given a plus position (leaning at the top away from the meridian plane of the head), but parallel with the naturally vertical meridian of the other eye, which, as already shown, now has a minus position (leaning at the top toward the meridian plane of the head).

In this position of the head, the obliques (superior of the hyperphoric eye and inferior of the cataphoric eye) not only help the inferior rectus of the hyperphoric eye and the superior rectus of the cataphoric eye to control the visual axes, so as to make them intersect at the point of fixation, but they are also better able to maintain parallelism of the naturally vertical meridians, in their forced declination toward the cataphoric side.

As long as the hyperphoria remains uncorrected the axes of astigmatic lenses should be shifted so as to correspond with the declinations of the retinal meridians.

G. C. S.

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*See OPHTHALMIC RECORD, January, 1899, Page 33.

CORRESPONDENCE.

EDITORS OPHTHALMIC RECORD:

An article appearing in your journal for January by Richard H. Satterlee, of Buffalo, N. Y., I think justly calls for criticism.

Doctor Satterlee's claim that the ophthalmologists are directly responsible for the present state of affairs regarding refraction as done by the so-called "ophthalmo-optician," or "doctor of refraction," is certainly unfounded, and a long way from the real underlying cause. Doctor Satterlee's acquaintance must be different from that of other oculists with "brilliant operators" in ophthalmology, who, as he says, regard refraction as a "momentary pastime, or nuisance," to be quickly gotten rid of. I think the acquaintance of any oculist with men of prominence in ophthalmology will bear me out in saying that there is not a man of eminence in this field of work who so looks upon refraction. Neither does any of the text-books neglect this important subject, and these books are surely written by men of as great eminence as the men (though not named by Doctor Satterlee) to whom the writer refers in his article. Ophthalmologists the country over, in my judgment, work out the refractive condition of the eyes as carefully as they do the most difficult muscle-problems, and I do not think the doctor can substantiate his claim, nor obtain from men of prominence a statement that they regard refraction as a "momentary pastime or nuisance" to be quickly gotten rid of. This is but an exaggerated statement, an idle speculation.

The doctor's statement that many conscientious men have not the time to devote to a patient to properly determine the refractive trouble, is equally as far from the truth as the rest of his statements. If such men are so busy, they do not need any "momentary pastime," and they proceed at once to determine what the refractive trouble is. Under a mydriatic the time required is not usually long to determine the exact refractive status of a given case, and I know of no oculists who do not do their work both quickly and correctly. The doctor seems to think that better results are obtained by furnishing his own glasses, as the optician or lens-grinder makes about 25 per cent. of mistakes. I think a good optician in one's own town is equally as competent to make a lens correctly as one in some distant city. · I believe it is the practice of oculists generally to examine the work of the optician, and in my own experience very few mistakes are made. The doctor quotes from a so-called "eminent ophthalmologist," who says "he usually prescribes a plus or minus lens, whichever seems most agreeable to the patient." The degree of eminence in such a case must be left to the doctor's own judgment, but I think in the minds of most oculists this, surely, would not prove him to be of the highest, as such a practice is too ridiculous to require further comment.

The doctor scores the ophthalmologist again for hurried and careless work, and says physicians "are sending their patients to opticians rather than subject them to a superficial and hurried examination at the hands of the oculists." Perhaps some physicians do send now and then a patient to the optician, when they think the trouble is very simple; but usually this is done as a matter of so-called economy. The large majority of such cases, however, find their way to an oculist sooner or later for proper treatment. The growth of the so-called "graduate optician" is in no way connected with the work that the ophthalmologists have been and are doing; but from purely commercial motives these men aspire to do something for which they are not fitted (except in their own imagination), and undertake to adjust lenses to the various abnormal refractive conditions of the eye, which can be considered in no other light than a branch of the practice of medicine, inasmuch as it is a means applied to the cure of a bodily deformity or ailment. Consequently, opticians are constantly encroaching upon the fields of the medical profession, and deceiving their patrons by saying they can do that which they ought to know full well they cannot do. The doctor says "utilizing the best methods of opposition is better than any legislation striving to control competition." Our methods need no revision, but the rights of the public should be respected in this as well as any other branch of practice. Opticians are not our competitors, but are our would-be imitators, and are certainly impostors.

If the laws on our statute books to-day in the State of New York are not capable of determining who shall practice medicine, then the sooner special legislation is brought about to determine it the better it will be, both for the public and the medical profession.

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REPORTS OF SOCIETIES.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held February 14, 1899, with Dr. Ware in the chair.

Dr. W. E. Gamble exhibited a case of *unusual fundus changes in a case of inherited syphilis* in a boy 11 years of age who came to the Illinois Eye and Ear Infirmary a few months ago complaining that he could not see well. Vision, $\frac{20}{200}$ in each eye. He has never had a severe illness, nor has he had any disease of the eyes. His antecedent family history is not so good. His mother gave birth to a still-born child about a year and a half before the birth of the patient. The next, but one younger than the patient, died at the age of six weeks. Personal inspection of the boy shows very characteristic inherited syphilitic facies. The enamel of the central incisors is defective. The lymphatic glands are involved, especially in the cervical and epitrochlear regions; flattened nose; linear cicatrices at angles of mouth, and other well-marked evidences of this inheritance. On examining the boy's eyes there was found an error of refraction + 4 sph + 1D cyl. ax. 180° in each eye. Both corneæ are normal in appearance. The lens in right eye has a punctate opacity on anterior surface, irregular in form about 5 by 6 mm. There is some pigment also attached to the lens at this point, the remains of a posterior synechiæ resulting from irido-cyclitis during intrauterine life. There is chorio-retinal degeneration in the right eye, also atrophy of the disc. This atrophy is secondary. The arteries are reduced in size in the retina; the lamina cribrosa does not show, but there is a bluish effect from the disc. In the left eye the disc is bluish-white, very pale, vessels constricted, and on each side of the arteries is seen a streak of connective tissue, the result of periarteritis. There was marked chorio-retinal degeneration. In cases of inherited syphilis we often see a patch in the periphery of the retina, but to see the whole retina involved as in this case is somewhat rare. Observation heretofore is that in cases of inherited lues it is rare to find the results of periarteritis. We know that syphilis has a predilection for the arteries, and we speak of it as primarily a disease of the blood vessels. The reason that we do not see these evidences of vascular trouble in these cases is probably due to the fact that the mild cases live, the severe ones die *in utero*, or soon after birth.

Dr. Ware: In syphilitic cases mercury can be used quite freely, both in children and adults we have more success with mercury administered alone than with mercury and potash. In administering mercury to a child there is nothing like the inunction method, although in order to get its rapid effects it is also beneficial to give it internally. If mercury is pushed both by inunctions and internally there ought to be some benefit from it.

Dr. Gamble's experience in the systemic treatment of these fundus cases with mercury and the iodides has been limited. He has but little faith in their efficacy, especially in a patient 11 years old. There could be but little question raised against their use during the first few years of life, for the tertiary stage may still have not spent all its force.

He has seen but little good come from specific systemic treatment in cases of interstitial keratitis. Interstitial keratitis is a post-syphilitic disease of the uvea with a resulting involvement of the cornea. If any pathological changes are occurring in choroid or retina at present in this case, he would consider them also post-syphilitic. If this be true, mercury would be of little avail.

Dr. C. P. Pinckard reported a case of *obscure tumor of the sclera*, first seen by Dr. Pinckard December 29, 1898. The following history was told: Some two weeks previously the child had a feeling of foreign body in the left eye. The mother examined the eye and noticed a small growth. It was very small and not injected.

The family history is good except for a suspicion of specific trouble on the father's side, which could not be verified, as the father could not be seen. Evidences of inherited lues are present in the child in the shape of enlarged glands, notched teeth, etc., but these are not well marked.

On the left sclera about 2 mm. below the corneal border a yellow mass 4 mm. in diameter, almost hemispherical, was seen, to which and over which there were a considerable number of small blood vessels. The conjunctiva was freely movable over the tumor. There was no pain or tenderness; the cornea and iris were normal, and vision normal. It was impossible to see any change in the ciliary body with widely dilated pupil.

The question of treatment depended entirely on the diagnosis. The suspicion of hereditary lues determined a trial of iodide and mercury.

Daily inunctions and beginning doses of 10 grains potassium iodide four times per day, rapidly increased to 50 grains four times per day, were started, and have been taken since that time.

The effect on the tumor has not been brilliant. For three weeks it continued to grow until it attained its present size (about 6 mm. in diameter). Since that time, that is, for two weeks, it has not grown, but remained stationary. The effect of treatment on the congestion has been rather marked. For the past two weeks it has steadily diminished.

The child, in spite of the large doses, has not yet become saturated with iodide and mercury. The diagnosis seems to lie between gumma, tubercle and sarcoma. The indefinite, but suspicious family history, the physical signs, though not marked, the apparent cessation of growth of the tumor under iodide and mercury, and the ability to take such large doses without saturation, would seem to indicate that the tumor is a gumma. About January 15th it was noticed that the center of the tumor looked soft and gelatinous, and the sarcoma side of the diagnosis became more prominent. Dr. Pinckard has had a number of cases of specific troubles where no effect from medication was observed for some time, yet when improvement did start, it was very rapid. His idea is to still increase the doses until this boy becomes saturated, and to keep him so until a fair chance is given the tumor to respond. As far as is known, the tumor began two weeks before December 29th, that is, about nine weeks ago. How long before that it existed we cannot tell. It has never given the child any trouble, nor has it affected the vision or fundus, which are still normal.

Dr. Ware: Naturally we would compare this case with the other one that has been exhibited, and we should say from the appearance without going into the case minutely, that it would suggest hereditary trouble.

Dr. Pinckard: There is no irritation in the eye whatever, and the trouble seems to be entirely confined to the sclera.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT PHYSICIANS.

February Meeting—The President, Dr. W. A. Martin, in the chair.

Dr. Henry L. Wagner read a paper on *The Pathology of Intra-ocular Erysipelas Following Facial Erysipelas.* He distinguished two different forms. (1) *The Acute Ulcerative Form.* In this form there is suppurative irido-choroiditis produced by streptococci erysipelatis (mixed infection). The eye is affected only during the active stage of the disease on the head. The prognosis as to the eye is disastrous, and besides, there is danger of meningitis. (2) *The Chronic Inflammatory Form.* Here there is irido-choroiditis simplex followed by optic neuritis, the result of the toxines of erysipelas streptococci, and occurs oftener after the active stage of the disease has passed.

The prognosis is doubtful, as atrophy of the optic nerve mostly follows, which is principally due to degenerative changes in the smaller blood vessels of the retina and choroidea (endarteritis, thrombus formation), and not due to inflammation of the orbital cellular tissue followed by compression of the central vessels of the retina, as generally stated in text-books. The hidden focus of infection is found often in the nasal cavities near the hiatus semilunaris. Hence the nose should always be examined.

The president presented a young girl with *Keratitis Punctata Interstitialis* of five months' standing. This disease he had found infrequent, only having had three or four cases. With the Jackson binocular loupe spots can be seen at different depths in the cornea. On the posterior surface of the lens is an opacity which is the main cause of the diminished vision. There is no iritis in these cases and they are quite different from descemetitis. In the case presented there is no specific history. He had given the iodid in 15-grain doses, and had also tried large doses of pilocarpine, but without producing diaphoresis.

Dr. Wagner spoke of the value of massage in such cases, which, in his experience, are tedious.

Dr. R. E. Payne had seen cases of keratitis punctata in the clinics abroad, and recalled three cases occurring in one family with remarkable uniformity as to the number and distribution of the spots.

Dr. Southard described some cases of specific origin.

Dr. F. B. Eaton thought that the chief point of interest in Dr. Martin's case lay in the opacity on the posterior capsule, and believed this positive proof that the uvea is affected, even in the absence of iritis, the inference being that such a case may really be a variety of descemetitis.

Dr. L. C. Deane had had under his care a lady of 60 years, with no specific history, who had descemetitis in one eye only. She had suffered from rheumatism for years. The use of atropine discovered, unexpectedly, old posterior synechiæ.

Dr. Wagner exhibited some stained specimens of the bacillus of pertussis, and also demonstrated the use of Kirstein's autoscope. It had not proved to be a generally useful instrument except in operating upon laryngeal papilloma in children under narcosis, where it had been of valuable assistance.

Dr. F. B. Eaton was elected an active member.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting February 21, 1899. Dr. George C. Harlan, Chairman, in the chair.

Dr. C. A. Veasey exhibited a patient with *Atrophic Retino-choroiditis and Beginning Angioid Streaks in the Retina.* The patient was a male, 55 years of age, whose vision had been failing for two years. There were extensive retino-choroidal changes, especially in the macular regions, and following the course of some of the blood-vessels there were numerous angioid streaks, presumably due to former hemorrhage. No cause could be assigned. The patient was a farmer, apparently in excellent health. He had no history of syphilis, and the urinary examination was negative.

Dr. G. Oram Ring reported a case of *Successful Irido-cystectomy*, made according to Knapp's method. The patient had been operated on for senile cataract six months before. Slow and complicated healing resulted in complete closure of the pupil and coloboma by the exudative products of irido-cyclitis. Light-perception and projection, the latter imperfect, were present. The operation was performed as follows: A horizontal incision 6 mm. in length, 3 mm. from the lower scleral margin, was made with a Beer cataract-knife through the cornea. After the blade entered the anterior chamber the handle was depressed and the point of the blade carried upward to that portion of the iris just below the yellow-white membrane that filled the old pupil and coloboma and the iris divided transversely 4 mm. The iris and the underlying exudative membrane were caught with a Tyrrell hook, drawn out through the corneal wound, and excised. Very slight reaction followed, and in three weeks vision with lenses equaled $\frac{20}{50}$. Dr. Ring had only one case of irido-cyclitis in seventy extractions.

Discussion.—Dr. de Schweinitz said that among one hundred and ninety-four operations for cataract of various kinds irido-cyclitis, with drawing up of the iris and closure of the coloboma by a web-like membrane had occurred four times. First, in the left eye of a woman, aged 70, from whose right eye a cataract had been extracted, resulting in normal vision; simple extraction; prolapse of iris on fourth day; irido-cyclitis; usual medicinal treatment; eye white and quiet six months later; vision equals counting fingers at one meter; operative interference positively declined. Second, a man, aged 60, a chronic alcoholic, with chronic conjunctivitis; combined extraction; capsule opened with capsule forceps; typical irido-cyclitis, which was yielding to treatment when patient, at the end of fourth week, eloped from hospital; last recorded vision, five weeks later, $\frac{10}{200}$, a vision which has no doubt deteriorated, for patient was not seen again. From his right eye a cataract had been extracted by another surgeon years before and the eye lost by irido-cyclitis. Third, a woman, aged 65, with chronic conjunctivitis; combined extraction; on the fourth day, after traumatism in the night, wound found open and blood in anterior chamber; typical irido-cyclitis; ten weeks later eye quiet; vision with +12 equals $\frac{4}{150}$; operation declined. Extraction of cataract from the opposite eye two years before, by another surgeon, had also resulted in loss of the eye from irido-cyclitis. Fourth, a colored woman, aged 50; cataract complicated with high myopia and capsulitis; combined and difficult extraction; moderate iritis, with thickened web in coloboma; vision with +10 equals $\frac{3}{150}$. Two months later modified irido-capsulectomy upward (not Knapp's operation); good coloboma, remaining for about a week, and nearly doubling of the previous vision, then gradual contraction of the opening, succeeded by an attack of irido-cyclitis of stubborn character, slowly yielding to medical treatment. Vision one year later, fingers at 50 cm.; eye white and quiet; normal light projection.

Dr. de Schweinitz had seen one case of sympathetic ophthalmia, in the practice of a colleague, follow excision of the thickened membrane after irido-cyclitis. He had performed several operations on cases of irido-cyclitis which had come to him in the wards of the Philadelphia Hospital after cataract extraction elsewhere, and had always employed either Agnew's operation or De Wecker's iridotomy. In some cases there had been decided visual improvement, but none had reached so good a result as that reported by Dr. Ring.

Dr. Risley said that restoration of useful vision in case of closure of the coloboma after extraction by irido-cyclitis is comparatively rare. Left to themselves these eyes are subject to degeneration of the vitreous and atrophy of the ball. The fortunate result in Dr. Ring's case suggests the advisability of making, early in the case, an artificial pupil, in the hope that a restoration of communication between the vitreous and anterior chambers may arrest the degenerative process. He had often been disappointed in restoring vision by the presence of dense and abundant masses of exudate back of the iris, so strongly attached to the ciliary region that the procedure employed in this case must have caused dangerous traction upon the ciliary body.

He had never performed Knapp's operation, as described by Dr. Ring, but had employed other procedures in different cases. In one, where the lines of traction were horizontal, a narrow cataract-knife was entered at the inner side of the chamber, and carried through the exudate at the lower border of the coloboma, which was drawn well up to the upper border of the cornea, and then downward, cutting through the rim of the pupil and making a vertical slit in the iris. The result was a triangular pupil, which remained open, but the dense exudate behind the iris impaired the visual results. It is not always necessary to take out a piece of the iris in order to secure a pupil. In one case he entered a cataract-knife just below the line of the original incision, perforated the iris, and divided the fibers horizontally across the line of upward traction. The immediate result was a horizontally oval pupil, which after a few days became nearly round.

He prefers entering the anterior chamber from above, as it does not require the rotation of the knife in the wound, as when entered from the side as suggested by Dr. Noyes, and, furthermore, the mechanical advantages are better for perforating and dividing the iris-fibers.

Dr. Harlan had fairly successful results by cutting out a triangular piece of iris and underlying membrane by means of de Wecker's iridotomy scissors.

Dr. Ring exhibited a patient with *Rupture of Choroid and Optic Nerve* of the left eye, from injury by a baseball four years ago. Vision was reduced to counting fingers eccentrically. The eye was quiet and the condition of the fellow-eye was normal. There was no surgical nor cosmetic reason for operative interference, but the patient, who was a well-behaved, industrious boy previous to the accident, had become monomaniacal on the subject of his injury and begged to have the eye removed. He had become unable to center his attention upon any sort of work, because the scotoma invariably caught and preserved his attention. All treatment directed to his nervous system and all efforts to exclude the eye from participating in vision by the use of ground glass and shades, etc., had been nugatory. The boy and the members of his family insisted that the removal of the eye would entirely relieve him. Dr. Ring believed the decision a very serious matter, regarding it as entirely possible that the fixed ideas concerning his eye might be transferred to the artificial eye, or to some other portion of the body, to which opinion Dr. Wharton Sinkler concurred.

Discussion.—Dr. de Schweinitz did not believe that the enucleation of the eye in Dr. Ring's case would relieve the mental symptoms, and related a case of mania as the result of blindness from non-painful chronic glaucoma, in which iridectomy, made in order to satisfy the patient, whose chief complaint was red vision, had not only failed to relieve her, but had seemed to aggravate the symptoms.

Dr. Risley had two similar experiences. In the first case the left eye was lost through a violent cyclitis, and was removed to relieve severe pain and disturbing photopsia. A year or two later the right eye passed through an identical experience, but in this instance not only was excruciating pain a factor which made excision advisable, but the photopsia developed into a red glare. She said "she was living in a sea of red fire." Her mental condition became distressing. The second eye was then removed, but without in the least correcting the photopsia, although the pain was relieved. After a few fateful years she died insane. Can it be true that the original cyclitis was of central origin?

The second case was one of high myopic astigmatism. The patient, an otherwise healthy woman in early middle life, was surrounded by all the possibilities afforded by wealth. With correcting glasses she had normal acuity of vision in each eye, but she suffered from ocular imbalance, for which many tenotomies had been performed. She suffered from constant occipital headache, which radiated to the shoulders and down the spine, and would, on the least provocation, lead up to explosions of violent sick headache, which would drive her to bed in a darkened room. She was the victim of nausea, palpitation of the heart, and other derangements of the nervous system, often culminating in attacks of hysteria. She came from another city with the request that he should remove one of her eyes. This he refused to do. With her correcting glasses and suitably adjusted prisms she had binocular vision as long as the eyes were held approximately in the primary position, but in passing through a crowded street, or where there were moving objects, she had confused vision and often diplopia, and would return to the house exhausted and sick. She returned to her home, however, with her glasses, but a month later wrote to make an appointment for the removal of one eye. This he declined, but a letter from her husband two months later informed him that an eminent ophthalmic surgeon had performed the operation, notwithstanding her normal vision in each eye, and that her symptoms had disappeared.

Dr. Hansell proposed hypnotic suggestion as a remedy, and Dr. Friebis enlarged upon its beneficent results as practiced upon patients in the foreign clinics for nervous diseases.

Dr. David Riesman presented *A Case of Day-blindness* in a man, 53, engineer, who since June, 1898, had complained that all objects seen in daylight were indistinct and seemed to be shrouded in fog, while by night his sight was unchanged. He could distinguish with ease the colors of the lanterns on the switches at night, but in the daylight could not see the colors of the signal-boards or the switches. The conditions of vision were variable, sometimes better, sometimes worse, but his constant complaint was of diminished vision by daylight. The ability to read fine type had been lost. Examination of the eyes by Dr. L. Brewer Hall: V.=R.$\frac{6}{8}$,L.$\frac{6}{30}$, in a light room, and not improved, but made decidedly worse, by lessening the illumination; pupils contracted, but responsive to light and in accommodation; lateral nystagmus in abduction; media clear; optic nerves partly atrophied; no color scotoma. The study of the form and color fields was unsatisfactory. In view of the patient's inordinate consumption of tobacco, the negative history of syphilitic or other infection, the normal station and knee-jerks, the absence of pupillary symptoms, and the presence of advancing optic-nerve atrophy, the symptoms were ascribed to toxic retrobulbar neuritis. The day-blindness was probably due to the consumption during daylight of more visual material than could be produced at night. Dr. Riesman considered the definition and etymology of the word "nyctalopia" given by Greenhill and adopted by most American writers to be correct, and that nyctalopia properly expresses night-blindness and hemeralopia day-blindness.

Discussion.—Dr. de Schweinitz called attention to the fact that in most cases of central amblyopia in which the papillo-macular bundle of optic-nerve fibers was affected day-blindness was present, and that vision was comparatively better at night because, the pupils being dilated, the periphery received greater stimulation. Dr. Risley held the same view—namely, that the unsatisfactory vision in strong daylight was due to the contraction of the pupil, which confined the images more exactly to the region of a central scotoma.

Some cases of Choroiditis and Retino-choroiditis with Unusual Ophthalmoscopic Appearances.—Dr. de Schweinitz described a case of *Neuro-choroido-retinitis*, the ophthalmoscopic appearances of which were similar to those caused by thrombosis or hemorrhage into the optic nerve sheath, but the disease apparently had its origin in the choroid and occurred in a healthy man, 68 years of age, the lesions being symmetrical and extensive: a case of *Retino-choroiditis* due to inherited syphilis, almost exactly resembling Förster's *Areolar Choroiditis*, except that the lesions were not specially grouped around the disk and in the macula, but were placed upon the nasal side and lower portion of the fundus: a case of *Perivasculitis* and *Secondary Atrophy of the Disk*, associated with most unusual pigmentation incrusting the peripheral blood-vessels, which occurred in a child otherwise healthy, with the history that the ocular conditions had followed an attack of measles eight years prior to the eye examinations; a case of chronic epilepsy in a syphilitic, with *Retino-choroiditis* and unusual distribution of the pigment in the periphery of the eye-ground in the form of small fringed flecks, being particularly massed above the disk and downward and inward.

Discussion.—Dr. Risley had seen one case, which was studied at the Wills Hospital by the President of the section also, where the same ophthalmoscopic appearances were present as in Dr. de Schweinitz's first case. There was œdema or infiltration of the retina in the region of the optic nerve, spreading to and surrounding the fovea, which presented the cherry-red appearance as seen in embolism of the central artery of the retina. The eye was quite blind. The condition had come on almost suddenly, as a blurring of the vision, while the woman was engaged in ironing on a hot summer day. The blurring rapidly increased, so that in an hour or two she was unable to count fingers. She was placed in bed in the hospital, received a saline purge, and blood was taken from the temple and mastoid regions. Later, ascending doses of potassium iodide were administered. The retinal œdema disappeared in a few weeks, leaving only a few white dots in the macular region, and vision rose to one-fifth. The nerve then became atrophic, with steadily advancing concentric contraction of the field and loss of central acuity of vision. The patient is still under observation.

Also, A Case of Cured Sympathetic Iritis.—Dr. de Schweinitz, after referring to the gravity of the prognosis of sympathetic iritis and the comparative rarity of permanent cures, described a case of sympathetic iritis, or, more correctly, irido-cyclitis, of the serous variety, associated with papillitis, which he had treated more than five years previously by enucleating the exciting eye (traumatic irido-cyclitis with retained foreign body) and administering protiodide of mercury and large doses of quinine, and in which there had been no relapse, the vision at the present time being normal and the man inconvenienced in no particular.

Also, Almost Total Detachment of the Retina of Three Months' Standing: Complete Reattachment and Restoration of Function After Forty-eight

Hours of Dorsal Decubitus.—The original cause of the detachment had been a blow upon the eye administered by the tail of a horse. The original visual field was only a small quadrant in the lower and outer portion, and vision equaled seeing movements of the hand downward and outward. After the rest-treatment of forty-eight hours, vision rose to $\frac{20}{70}$, with complete restoration of the visual field for white, blue and red.

HOWARD F. HANSELL, *Clerk of Section.*

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

An ordinary meeting of the Society was held on January 26, Mr. H. R. Swanzy, President, being in the chair.

Mr. H. Grimsdale read a paper on "Rapid Changes in Refraction in Connection With Diabetes." A female, aged about 45 years, was first seen on Oct. 7, 1897. She had been always thin and delicate and had been losing flesh. She had been wearing for near-vision—right, spherical + 1 D., cylinder + 0.75 D., left, spherical + 1.75 D. She had suddenly noticed a change in the power of her sight a few days before her visit; distant objects became dim and near objects became clearer. When seen the vision of the eyes was $\frac{6}{60}$; with − 2 D. spherical and − 0.5 D. cylindrical for the right eye and −2 D. spherical for the left eye the vision equaled $\frac{6}{6}$. The result was confirmed by the shadow test. In the right lens there were several opacities near the center; the left lens was clear, but the nucleus in each was marked. No other defect in the eyes was found. The condition was regarded as early sclerosis of the lens and glasses for distance were ordered. Dr. Stokes had shortly before discovered a large amount of sugar in her urine (26 grains to the ounce). The urine had been frequently examined in previous years and had contained no sugar. After ten days the vision had returned to its former condition, that of the right eye being $\frac{6}{18}$, with −0.5 D. $\frac{6}{12}$, and of the left eye $\frac{6}{6}$. The right lens showed irregular astigmatism, but the opacities were unaltered. About three weeks later the patient died from diabetic coma. The interest of the case lay in the development of myopia and its rapid disappearance. A similar case was reported by Risley, in which disappearance of sugar in diabetes was accompanied by development of hypermetropia followed by a return to normal when the sugar reappeared. The cause is probably a lenticular one; it was impossible to assume an alteration in position of the retina; it was not likely to be due to spasm of the ciliary muscle, as this would have involved a permanent spasm in Risley's case suddenly giving way and then reappearing.

Mr. Doyne had seen a case of acute diabetes in a doctor with rapidly failing sight. He had 3D. of hypermetropia, and these glasses he prescribed for constant use. After a short time he could not see at a distance with them and it was found that he then had only 2D. of hypermetropia, and with this correction he had normal acuteness of vision. Shortly after this a further reduction in the strength of the glasses became necessary, and when by treatment the sugar disappeared from the urine the refraction was found to be normal. This was quite the reverse of Mr Grimsdale's case.

Mr. Mackenzie Davidson gave a demonstration of the most recent changes and developments he had made in his method of investigating the presence and position of foreign bodies in the eye and orbit. Two negatives were taken, the Crooke's tube being displaced six centimetres, this being about the intraocular distance. If these negatives were examined side by side against a window, with a little practice in convergence, a miniature stereoscopic picture started into vivid relief and a fairly accurate estimation could be made of the situation of the foreign body in relation to a known point such as a piece of lead wire attached to the lower eyelid.

The best instrument for seeing stereoscopic skiagraphs was a Wheatstone's reflecting stereoscope. If the skiagraphs were reversed the object still stood out in perfect relief, but the foreign body appeared to be in the other eye. Mr. Mackenzie Davidson had applied his method of localizing foreign bodies in the eye in seventy cases and he claimed for it an indispensable position in ophthalmic practice.

Mr. Silcock mentioned a most successful case he had had where a foreign body had been localized about 6 mm. from the optic disc. Under an anæsthetic he had been able to successfully remove it.

Remarks were also made by Mr. Adams Frost, Mr. Collins, Mr. Johnson Taylor, Mr. Cargill. After this Mr. Mackenzie Davidson replied.

The following card specimens were shown:

Dr. J. Hern, "Obstinate Conjunctivitis."

Mr. D. C. Lloyd Owen, "The Castella Eye Shield for Use After Cataract Extraction."

Mr. Jessop, "Skiagraph of a Foreign Body in the Eye."

Mr. J. Griffith, "Microscopic Specimen of a Primary Sarcoma Occurring in the Interstitial Substance of the Cornea."

Major Yarr, R.A.M.C., "Patch of Central Choroiditis Simulating the Optic Disc."

Mr. Higgins, "Case of Removal of the Lens for High Myopia."

Mr. E. C. Fischer, "Case of Associated Movement of the Lid and Jaw."

Mr. A. Bronner, (1) "Congenital Tumor of the Cornea; Degenerated Nævoid Growth," and (2) "Tubercular Tumor of the Iris."

Mr. Silcock, "Case of Central Choroiditis."

OILY COLLYRIA.—At a recent meeting of the Paris Academy of Medicine (*Progrès Médical*, January 28th). M. Serini insisted on the advantages of oil as a solvent of alkaloids for ophthalmic use. Oily solutions, he said, were better borne and more efficient than aqueous collyria.—*New York Medical Journal.*

SEEING THROUGH THE NOSE.—M. Douliot (*Revue Médical; Gazette des hôpitaux*, August 21, 1897; *Revue internationale de rhinologie, otologie et laryngologie*, December, 1898) reports the case of a man who, as was the case with several others reported in the sixteenth and seventeenth centuries, learned to see through his nasal cavities after the successive loss of both eyes. The right eye had been lost in childhood; the other eye, as well as the nose, had been lost in a fall upon a stake. A year later he perceived that he was able to distinguish through the nasal aperture the light of day, and also brilliant objects placed beneath it. It is considered probable that the retina had been spared, and that there remained an opening of communication between the nasal fossoe and the orbital cavity.—*New York Medical Journal.*

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

DR. P. R. JOLY, of Bordeaux, has demonstrated the spread of trachoma by flies.

DR. KARL HARTMAN has been appointed Professor of Ophthalmology in University of Berlin.

DR. WM. H. BAKER, a prominent ophthalmologist of Lynchburg, Va., is dead. He was 42 years of age.

BRIGHT red spectacles accompanied by internal doses of calomel form a new German specific against seasickness.

DR. E. S. PECK has been made Professor of Diseases of the Eye at the New York Post Graduate Medical School and Hospital.

DR. S. J. JONES, of Chicago, Ill., celebrated his thirtieth anniversary as oculist and aurist to St. Luke's Hospital, March 4, 1899.

DR. DAVID DE BECK, of Cincinnati, O., has been appointed a member of the association of "Societé Francaise d' Ophtalmologie."

DR. F. VAN FLEET and Dr. J. Edward Giles, of New York, have been appointed surgeons to the Manhattan Eye and Ear Hospital.

DR. CHARLES A. OLIVER has materially increased the library of the University of Pennsylvania by a collection of new books on the eye.

THE Baltimore Eye, Ear and Throat Charity Hospital has just issued its annual report. It shows that 2,552 eye cases have been treated the past year.

THOSE desiring positions in the Eye, Ear, Nose and Throat Hospital of New Orleans should present themselves always the first Monday in December.

In the *Arch de la Poloclinica* for February are noted two cases of atrophy of the optic nerve after quinine injections. Sight was recovered in a few weeks.

Dr. Albert B. Hale, of Chicago, Ill., who has been seriously ill at his home, 2200 Prairie avenue, is now well and has returned to his professional duties.

Dr. Frank Allport, of Chicago, has received the appointment of Professor of Ophthalmology and Otology at the Northwestern University Woman's Medical College.

The Senate of Utah has passed a bill for the erection of a hospital for the State School of the Deaf, Dumb and Blind at Ogden, Utah, and appropriated $3,500 for its use.

Dr. Allen T. Haight has resigned his chair of ophthalmology in the Chicago Eye, Ear, Nose and Throat College, and has been elected Professor of Ophthalmology in the Chicago Clinical School.

Dr. E. C. Ellett and A. G. Sinclair have been elected oculists on the new staff of the Memphis City Hospital. Dr. Ellett has also been elected ophthalmic and aural surgeon of the Lucy Brinkley Hospital, Memphis.

Dr. N. T. Weill, of Titusville, Pa., has been appointed assistant physician at the Eye and Ear Clinic of the University of Zürich. This is said to be the first time that this honor has been conferred on an American.

The Wills Eye Hospital of Philadelphia is over-crowded with work to such an extent that their accommodations are scarcely adequate to the demand. Within the last year they have treated 12,587 patients and have made 46,823 visits; 616 patients have received treatment in the hospital wards.

One of the most interesting works that has yet appeared is that of Dr. A. M. Ramsey, of Glasgow, entitled, "An Atlas of External Diseases of the Eye." The book is beautifully gotten up and is a companion to the "Fundus Oculi," of Frost. The pictures are the best that we have yet seen, but the price (twenty dollars) places it beyond the reach of many.

Forceps for Chalazion Extraction.—Dissection and extraction are liable to be difficult with the hook usually employed, as it only seizes the tumor at one point and is apt to tear the tissue. Jacovidés has devised a forceps resembling a clamp, but with openings in the blades to oversee the grasp of the forceps. Each blade terminates in a dozen small mouse teeth which seize the tumor firmly.—*Bull. de l'Acad. de Méd.*, January 24.

Glaucoma Consecutive to Influenza.—Despagnet reports a case of subacute glaucoma following a severe case of influenza infection. Recovery followed instillations of pilocarpin, ingestion of quinin, and superior iridectomy. Two other cases were also reported recently in which glaucoma developed after influenza terminating in blindness, but in these there was evidently pre-existing tendency.—*Rev. Gen. d'Oph.*, January 31.

Out of 115 cases of ocular affections consecutive to relapsing fever, 19 were cases of choroiditis and 92 of iridochoroiditis; diagnosis generally favorable. . . . Baturew describes a case of complete amaurosis of both eyes, following the ingestion of four grams of quinin; slight improvement from massage and injections of strychnin. . . . Fournier states that half the children with heredosyphilis have strabismus.—*Journal of Amer. Med. Asso.*

Holocain is sparingly soluble in cold water, but freely so in hot. I prepare it by agitation with hot water on a porcelain vessel, and pour it when cold into a bottle thoroughly cleansed with liquor potassa and then with distilled water. It should not be prepared in glass vessels or stirred with a glass rod, for the alkali of the glass is dissolved out and precipitates the drug. The standard solution is 1 per cent strength, and this solution is clear, stable and antiseptic.—E. C. Ellett, M.D., in *Phila. Med. Journal*, Nov. 26, 1898.

Glaucomatous Atrophy.—Galezowski does not consider glaucoma a serous choroiditis, like the Germans, but the result of obliteration of the lymph vessels, which may be total or partial, slow or rapid, determining the variety of the glaucoma. He describes a new form, recalling the atrophy of tubes with which it is frequently confounded, glaucomatous atrophy, which has none of the usual symptomatic excavation. For this form and also for simple glaucoma, iridectomy is entirely ineffectual. Repeated anterior sclerotomy is indicated in these cases.—*Rev. Gen. d'Ophth.*, January 31.

THE ABSORPTION POWER OF POTASSIUM IODID AFTER CATARACT OPERATION.—Wicherkiewizc, Krakau (Wochenschr. f. Therap. u Hyg. d'Auges, September 8, 1898,) recommends the exhibition of iodid of potash in all cataract cases after operation, where the cortical substance is not freely absorbed as well as in discission cases, and especially during the operative treatment of high myopia.

It is necessary to give large doses, ordinarily from 3.00 to 5.00 grams, and sometimes as high as 10.00 per day. Under exhibition of this medicine in sufficient quantity the necessity for so many operations following cataract extraction is eliminated.—*Annals of Ophthalmology.*

THE EYES OF JAPANESE STUDENTS.—An examination, recently made, of the eyes of the students of the Tokio Imperial University, by Dr. Naoyoshi Sugita of the medical section in the university, gave the following results:

Course.	Number Examined.	Perfect.	Short Sight.	Far Sight
Literature	198	68	128	2
Technical	320	175	143	2
Medicine	130	54	75	1
Law	157	23	230	4
Science	94	39	55	-

N. Y. Med. Record.

SOCIETY OF WASHINGTON OPHTHALMOLOGISTS AND OTOLOGISTS.—The January meeting of the Society was held at the Hotel Cochran, as the guest of Dr. J. J. Richardson, with the president, Dr. S. M. Burnett, in the chair. Dr. Muncaster presented a case of interstitial keratitis in a child of three years, with history. An interesting discussion followed, participated in by Drs. Richardson, Belt, Burnett, Dye and Newal. Dr. Richardson read a paper on aural reflexes, relating several experiments he had recently made on a number of persons, manifesting the susceptibility to reflexes from irritations in the auditory canal. The subject was extensively discussed, and similar cases cited by Drs. Wells, Belt, Burnett, Dye, Muncaster and Mallone.—*Journal of the Amer. Med. Asso.*

A ROYAL DOCTOR.—Duke Carl of Bavaria, the famous oculist, has just been appointed an honorary member of the St. Petersburg Academy of Medicine. His Highness, who has just celebrated his sixtieth birthday, is at present practicing in his clinic in Munich. His brother, Prince Ludwig Ferdinand, who is also a medical doctor, has just been promoted to the rank of general of cavalry. He, however, only saw active service in the rank of lieutenant, while his brother, Duke Carl, commanded his wing of a cavalry regiment as major. Prince Ludwig Ferdinand receives patients in his palace at Munich and is a visiting physician of the University clinic. On account of one of his children being ill with an infectious disease, His Highness has not been at court for some weeks.—*From European Edition of The Herald.*

EYE MUSCLES AND THE BRAIN.—The brain in its relation to the muscles of the eye may be likened to a person driving a horse; the reins in the hands of the driver guide the animal perfectly when tractable and responsive, with scarcely a conscious effort on the part of the driver, their destination and intent being reached with a feeling of satisfaction and pleasure; but where the horse is fractious and difficult of management, the driver would soon become nervous, irritable, perhaps explosive. When the muscles (reins) of the eye are too short or too long, too weak or too strong; or when the demands of the eye (horse) are unusual or irregular, the brain (driver) becomes irritated, agitated, exhausted, producing headache. The simile may be verdant, but it is apt.—Dr. W. E. Hamill, in the *N. Y. Medical Record.*

THE staff of the *Annals of Ophthalmology* will shortly be enlarged by the appointment of additional editors and a number of collaborators. Abstracts of Dutch, Russian, Scandinavian, Polish and Grecian literature will be hereafter included. With these, the abstract departments of the journal will cover the ophthalmic literature of all the world. Book reviews and abstracts of foreign literature have generally appeared in the *Annals* several months in advance of other publications, even in journals of foreign countries where the originals were published. The abstract departments are a very valuable feature of the *Annals*, as references to all the up-to-date literature are here collated. Hereafter only original papers of first importance or the most exhaustive type will be accepted for publication in the *Annals of Ophthalmology*.—*Annals of Ophthalmology.*

OPERATIVE TREATMENT FOR SEVERE MYOPIA.—Removing the lens has become quite a frequent operation since Fukala's recommendation, but Prof. E. Fuchs restricts it to myopia with over 15 D. and cases without pronounced alterations at the back of the eye, threatening a central scotoma, for instance. He never operates on a patient over forty years old, and never if the other eye is useless. He does not consider the operation indispensable for the sight, nor entirely free from danger. As the alterations in the back of the eye, consequent to myopia, such as atrophic processes, hemorrhages in the retina, etc., persist after the operation, which is no protection against them nor against their further development, the eye cannot be worked like a normal eye all day, but must be favored. Operating is to be preferred to the wearing of glasses for waiters, coachmen, firemen, field hands, etc., but out of 18,000 patients that have applied to him during the past year he has only found the operation absolutely indicated in ten.—*Vienna Klin. Woch.*, February 9.

At the last meeting of the Western Ophthalmological and Oto-Laryngologic Association, held in New Orleans, the following names were added to the list of honorary members: Dr. Geo. Stevens, of New York; Dr. St. Clair Thompson, of London; Dr. P. Coen, of Vienna, Austria; Dr. E. J. Mouro, of Bordeaux, France; Dr. J. Sendziak, of Warsaw, Russia; Dr. Marcel Natier, of Paris, France; Dr. C. Ziem, of Danzig, Germany; Dr. A. A. Guye, of Amsterdam, Holland.

The new members were elected as follows:

Dr. J. A. Caldwell, of McKinney, Tex.; Dr. O. Joachim, of New Orleans; Dr. W. H. Baldinger, of Galveston, Tex.; Dr. J. S. Mott, of Kansas City, Mo.; Dr. J. S. Lichtenberg, of Kansas City, Mo.; Dr. J. W. Bettengen, of St. Paul, Minn.; Dr. J. W. Chamberlin, of St. Paul, Minn.; Dr. H. M. Starkey, of Chicago; Dr. R. Brunson, of Hot Springs, Ark.; Dr. Max Thorner, of Cincinnati; Dr. J. W. Scales, of Pine Bluff, Ark.; Dr. E. M. Singleton, of Marshalltown, Ia.; Dr. F. C. Ewing, of St. Louis.

Substitutes for Cocaine — Scale of Efficiency.— Dr. Schmitt (*Deutsche Medizinal-Zeitung*, January 26, 1899), as a result of numerous experiments, has devised the following scale: (a) Rapidity of anæsthesia: Tropacocaine, holocaine, cocaine, eucain A and B, orthoform. (b) Duration of anæsthesia: Orthoform, cocaine, eucain B, eucain A, holocaine, tropacocaine. (c) Intensity: Holocaine, tropacocaine, eucain B, eucain A, orthoform. (d) Analgesia of inflamed eyes: Holocaine, tropacocaine, eucain B, eucain A, orthoform. (e) Mydriasis: Cocaine, tropacocaine, eucain A, eucain B, holocaine. (f) Ischæmia: Cocaine, tropacocaine, eucain A, eucain B, holocaine. (g) Dilatation of blood-vessels: Eucain A, eucain B, tropacocaine, holocaine. (h) Irritation: Orthoform, eucain A, holocaine in strong solution, cocaine, eucain B, holocaine (weak), tropacocaine. (i) Antiseptic effect: Orthoform, holocaine, eucain B, tropacocaine, eucain A, cocaine. (j) Toxic properties: Holocaine, cocaine, eucain A, tropacocaine, eucain B, orthoform.—*N. Y. Med. Record.*

The following may be of interest in lid surgery: Heinze and Braun have been making a thorough comparative study of the various local anesthetics, their concentrations and combinations, personally testing each by injecting it into their arms, not subcutaneously, but endermically, as Schleich recommends. They find that an 8 per cent concentration of salt solution with distilled water, that is, isotonic with the cells fluids, does not cause pain during an injection, and does not affect the sensibility; also that a certain proportion of salt prevents the formation of blisters. They conclude by announcing that cocain is the most effective of all local anesthetics, but as eucain B equals it in respect to paralyzing the nerves and the absence of irritation with the additional advantage that it can be boiled again and again without injury, they therefore recommend the following formula as the best under all circumstances for infiltration anesthesia: Eucain B. 1 gm., cooking salt .8 gm., water 10 gm. The Cbl. f. Chir. considers their statements convincing and that they deserve general attention.—*Virchow's Archiv.*, cliii., p. 466.

Ocular Complications of Cerebro-spinal Meningitis.—The meningococcus has not yet been found in the conjunctivitis that may complicate meningitis. The lesions of the motor nerves of the eye are due to the predilection of the meningeal effusion for the base of the brain. Phenomena of excitation and paralysis in the first branch of the trigeminus may lead to neuro-paralytic keratitis, or it may be caused by a febrile herpes of the cornea. Sudden blindness may be of basal or cortical origin, the forrner more frequent, occasionally subsiding even after months have elapsed, and even when the pupil reaction is at times absent. If the inflammation spreads to the optic nerves it produces a double optic neuritis with total amaurosis, which may terminate in the restoration of function. This optic neuritis may be due to the presence of microbes or their toxins in the sheath. The papillitis is due to the action of toxins diffusing into the eye. Suppuration of the eye occurs from metastasis, or by continuity. He has observed three cases due to metastasis: one a mocrobian capillary embolism in the retina; in the second a suppurative retinitis without infiltration of the sheath of the optic nerve; in the third the last stage of this affection, the amaurotic eye.—*Rev. Gen. de Path. Int.*, January 5.

A recent number of the *Saturday Evening Post*, published in Philadelphia, contained an article by Mary J. Safford, entitled "Buying the World's Most Famous Manuscript."

This manuscript is the Papyrus Ebers, now preserved in the Library of the University of Leipsic. It was procured and placed there by Dr. George Ebers, the famous Egyptologist and novelist. The story of the discovery and purchase of this venerable manuscript is related in Dr. Ebers own words. He tells in a very interesting manner, how he discovered the manuscript in the possession of a Copt, named Todrus, who was at this time the German Consular Agent at Luxon. The purchase was effected none too soon to save this unique treasure from going to England, as Mr. Deutsch, curator of Oriental Manuscripts in the British Museum, was in pursuit of it, and arrived in Luxon very soon after Dr. Ebers obtained possession of the prize. The physical effects of the disappointment experienced by the worthy Todrus, when he realized that he had disposed of the precious manuscript too soon to profit by the "boom" incited by the presence of a competitive purchaser, is graphically set forth by Dr. Ebers in the following words. "He met me the same day and wished to withdraw from the bargain because an Englishman had offered him twice as much money. I shook my head. Todrus lamented and showed me his tongne, which had turned yellow from chagrin." The writer further says of this remarkable manuscript:

"But comparatively few persons know what the Papyrus Ebers is, or how the great scholar was so fortunate as to secure it."

The manuscript was written in the sixteenth century B. C., and is a medical work whose production was attributed to the God Troth. It contained formulas for the preparation of various remedies that were applied to the diseased parts of the body, while the physician repeated incantations. The chapter on the diseases of the eye is one of the most important, and it is certainly curious to find that fully 1,500 years before Christ, pulling out eyelashes was the cure prescribed for ingrowing ones.

THE
OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, MAY, 1899. No. 5. NEW SERIES

ORIGINAL ARTICLES.

REPORT OF A CASE OF HERPES ZOSTER OPHTHALMICUS.*

BY ADOLPH O. PFINGST, M.D.
LOUISVILLE, KY.

An apparently healthy woman, 28 years of age, shows two conditions following herpes zoster of the face. On December 1, 1898, the patient observed a small red area on the right temple, followed in a few hours by redness and a "drawing, burning pain" on the right side of the base of the nose. The pain soon spread over the entire right side of the face from the lower border of the nose to near the vertex above. The skin over the painful area became very red as far as the median line, where it terminated abruptly. The burning pain was continuous but less severe than an occasional neuralgic pain accompanying it. Two days later groups of little round blisters began to form on the erythematous base. The contents of these blebs, which varied from 1/8 to 3/8 in. in diameter, were watery when they formed, but soon became opaque and yellow. On the temple and side of the nose several blebs coalesced and formed larger irregular blisters. After several days the vesicles dried up and formed yellowish brown crusts, which after a while dropped off, leaving pits of varying depth and size. With the scab formation the pain ceased almost at once. The entire process of eruption, scabbing and desquamation lasted from ten to fourteen days.

About three weeks after the beginning of the trouble, the patient suffered intolerable itching over the erythematous area, so severe as to keep her awake at night. About the same time the eye-lids began to burn and the eyes became sensitive to light and watery. The general health of the patient had always been good. She was now pregnant in her eighth month. This part of the history was elicited from her, and the family physician who had seen her occasionally. When I first saw her on December 21, 1898, the right side of her face and the scalp, anteriorally, were hyperemic, having a bluish red color in sharp contrast to the left side. Pits of various depth, width and shape were noted in the skin of the right side of the face, particularly on the temple and nose. The lids of the right eye were a little puffy and their edges reddened. There was slight photophobia and lachrymation. The palpebral conjunctiva was hyperemic, otherwise normal; the bulbar conjunctiva injected from the periphery. Around the cornea a well-defined but delicate, narrow zone of vascular injection was noted. The cornea showed in its center a cloudy area about $\frac{1}{8}$ x $\frac{3}{8}$ in., resembling very much the cloudy cornea of a parenchymatous keratitis, being however more sharply defined. The sensitiveness of the cornea was apparently unaltered. The iris was normal, and responded promptly to atropine. Four days later, the iris evidently became involved, the pupil showing such a marked tendency to contract that atropine (1% sol.) instilled into the eye every two hours kept the pupil only moderately dilated, but round. This irritation passed off in several days with the pruritis of the skin.

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*Read before the Louisville Ophthalmological Society, March, 1899.

On January 5th, three days after having last seen the patient, the cornea showed four or five small, white spots varying from $\frac{1}{32}$ to $\frac{1}{8}$ in in diameter. The opacities were very delicate and superficial but sharply defined. The central macula had grown smaller. Sensitiveness of the cornea was now markedly diminished. The conjunctival side of the upper lid was marked by quite a number of small yellow areas which were apparently in the deeper tissue. The entire lid was covered with these dots, giving the red surface a polka-dot appearance. The larger areas seemed to come nearer the surface and caused some roughness of the lid. In the lower lid, a single area of the kind was found in the middle of the conjunctival side. This condition has remained unaltered. The areas may have grown some smaller. The nebulæ of the cornea increased in number until all parts of the cornea contained them. They have undergone no apparent change since. Soon after their appearance the circumcorneal injection subsided and the eye returned to normal with the exception of the two conditions just cited. I might add that the fundus was always found normal, V=20/40.

This case presents two conditions which I believe, from the infrequency with which I found them referred to in literature, to be of very rare occurrence, viz.: the yellow areas in the lids, particularly the upper and the superficial opacities of the cornea. It may perhaps be of interest to enumerate some of the features of the affections of the eye resulting from or accompanying *herpes zoster* which is limited to the ophthalmic division of the trifacial nerve or one of its branches. (*Herpes Zoster Ophthalmicus.*) Here as in zona in other parts of the body, the trouble begins with acute febrile symptoms and constitutional disturbances, such as headache, dullness, loss of appetite. Severe neuralgic pains mark the beginning of the eruption, or may precede it for a few hours or days. The skin becomes erythematous over the area of distribution of the affected nerve and studded with small, clear, vesicular elevations arranged in groups. These vesicles soon become opaque and white, finally dry up and form dark crusts which, when they exfoliate, leave pits variously deep according to the amount of cutis involved in the ulcerative process. The neuralgic pains, accompanied or followed by the appearance of groups of vesicles upon an erythematous base, are sufficient to make a diagnosis. The disease could possibly be confounded with eczema, but in this there is more itching and the vesicles break and are usually moist. Eczema usually attacks other parts than those in which *Herpes Zoster* is common.

Little is known of the etiology of these cases, the generally accepted view being that an inflammation of the nerve trunk takes place, induced by some constitutional trouble, as syphilis or rheumatism or by traumatism. Bacterial examinations have to my knowledge not been made. Results of the pathological study have been unsatisfactory, although evidence of inflammation along the course of the affected nerve has been observed.

The disease runs its course in about two weeks, leaving as a rule no sequelæ outside of the pitting. Sometimes neuralgic pains continue for a long time after the subsidence of the skin trouble.

The treatment should be paliative, as the disease has a tendency to recover. Phosphide of zinc internally, one-third grain three times daily, has been used to lessen the pain. Galvanism has also been successfully used for the purpose where morphine has failed. The itching can be lessened by the local use of a drying powder of oxide of zinc and starch.

When the ophthalmic nerve, or one of its branches is affected, there is often an involvement of some part of the eye, notably the cornea. A herpetic eruption of very transitory nature takes place, leaving ulcers which invade more or less deeply the corneal tissue and may lead to perforation. According to Haab, the corneal blebs differ from those of ordinary catarrhal *herpes* or the so-called *herpes febrilis*, in that there is a higher influx of leucocytes and consequently greater tendency to involvement of the iris and hypopion. The cornea not infrequently looses its sensibility, adding thereby to the gravity of the prognosis from sloughing of the cornea and loss of the eye. It may, on the other hand, be hypersensitive.

The only mention which I could find of superficial nebulæ, as presented in this patient, was in the text-book of Fick, who refers to six cases reported by J. Wangler, in which neither vesicles nor ulcers appeared, the only local condition being small opacities lying just below the epithelium.

Jessup, in the *Transactions of the Ophthalmic Society of the United Kingdom*, Vol. 6, mentions nebulæ as one of the sequelæ of corneal complications without describing them.

There is always more or less congestion of the conjunctiva and increased secretion, sometimes of a purulent character. Photophobia and lachrymation are common accompanying symptoms. Herpetic eruption has been observed upon the tarsal conjunctiva. Horner, *Transactions of Ophthalmic Society of United Kingdom*, Vol. 6, speaks of small subconjunctival abscesses on the palpebral surface of the conjunctiva. I believe that such a condition was present in his case, that the little yellow areas are incapsulated masses of broken down tissue resembling pus, caused by trophic disturbances.

A number of cases of serous iritis accompanying *herpes zoster* are on record, also cases in which the choroid and ciliary body were involved.

Many writers have noted that though apparently without adhesions the iris reacts badly or not at all to atropine. Exceptionally the ocular muscles have been involved in the inflammatory process.

A CASE OF MACULAR RETINITIS DUE TO FLASH OF ELECTRIC LIGHT.

BY H. V. WÜRDEMANN, M.D. AND W. R. MURRAY, M.D.

OF MILWAUKEE, WIS.

Illustrated.

The following case is presented for publication on account of the paucity of literature on the subject. In this age of electricity such accidents cannot be so rare as might be supposed.

H. C. B., male; age, 20; occupation, manufacturer; family and personal history good. January 6, 1899, patient presented himself at the office with the following history: At 11 A. M. on the preceding day he made a short circuit on a dynamo-switch with a knife blade. One-half inch of the knife blade was burned off, and patient was blinded by the flash for about ten minutes, and for some time afterwards the electric lights appeared a fiery red. Patient continued his work in the afternoon, but his eyes became congested, and he could not sleep that night and experienced considerable pain.

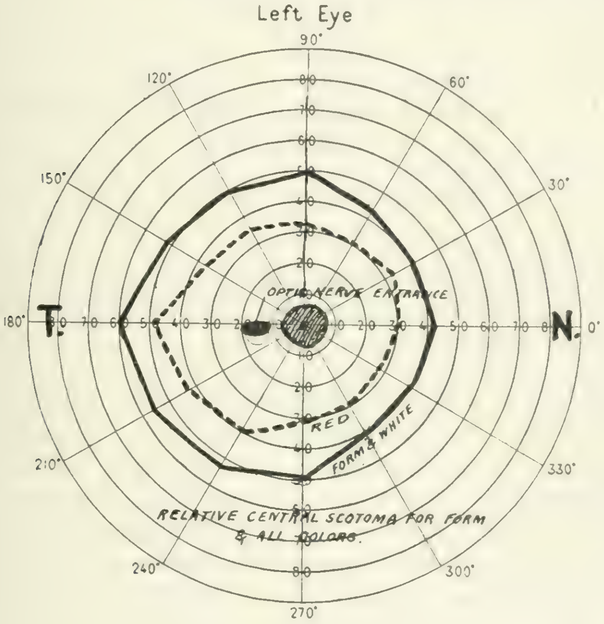


FIG. 1.

Visual Field of Left Eye, Jan. 26, 1899, Showing Central Scotoma.

On examination conjunctival congestion was found. The ophthalmoscope showed the inferior retinal veins congested and the macular region hazy, most marked in the left eye; visual fields contracted with relative central scotoma in the left.

Metamorphopsia right and left. V. R. = 6/XX; V. L. = 6/XXX. Prescribed atropin solution 1%, and confined patient in a dark room. He was seen at his house the following day, when the conjunctival congestion was somewhat lessened and the eyes more comfortable.

Patient seen at the office on the 12th, retinal veins congested and macula hazy; visual fields contracted, relative central scotoma in the left less marked than on first examination. V. R. = 6/XX; V. L. = 6/XXX. January 16th there was a slight haziness over the macular region; slight relative central scotoma. V. R. = 6/XX; V. L. = 6/XX. January 30th fundi appeared normal; visual fields normal; V. R. = 6/VI; V. L. = 6/VI.

This case presented fundus changes similar to those observed in cases of solar retinitis, but there was disappearance of all abnormal appearances and complete restoration of function, while in solar retinitis the injury to the retina is usually permanent.

THE USE OF EGG MEMBRANE IN OPHTHALMIC SURGERY.

BY DAVID H. COOVER, M.D.

DENVER, COL.

The egg membrane has been used in brain surgery, and to close perforations in the membrane tympanum. Its application in ophthalmic surgery has never been used, at least I have not been able to find any literature upon the subject. The first time I used this membrane was about a year ago in a case of symblepharon. Since then in case of a burn, corneal ulcer and after iridectomy where infection was feared.

Case No. 1.—Symblepharon. Right eye. Due to powder burn. The upper eyelid was completely adherent to eyeball from the caruncle to cornea, extending upward and to the median line. So firmly was the lid attached to the globe that the outward excursion was greatly impaired. Operation. The lid was separated from the ball, and all cicatricial tissue removed. This left two raw surfaces too large to be covered by conjunctiva. Instead of mucus membrane or skin a piece of egg membrane was used. Before the operation my assistant, Dr. B. Gilbert, thoroughly cleansed a fresh egg in formalin solution. As soon as hemorrhage ceased in the eye the shell of the egg was cracked and removed from the membrane. With forceps and scissors a large piece of the egg membrane was cut to cover the denuded surface on eyeball, overlapping so the edge could be tucked into a pocket made in conjunctiva below and above to hold the membrane in position. After removing the desired piece from the egg it was immersed in normal salt solution. When trimmed to fit the surface desired, and placed into position, the lids were closed and a compress bandage was applied. Eye examined daily. No pain, no irritation, no displacement.

At the end of ten days the membrane was removed, surface on ball and lid smooth, and no adhesions. Result perfect.

Case No. 2 was that of a large burn on the lower part of eyeball and inner surface of the lower lid of left eye, caused by a flash of hot lead. The burn was deep, and extended from the lower edge of cornea to the *cul-de-sac*. It was treated with ichthyol and vaseline until the sloughing stage had ceased, and granulations began to form and bands of adhesions appeared. They were broken down, and a piece of egg membrane was placed between the burned surfaces. Eye bandaged, no pain, no irritation; the membrane was removed several times, cleansed, and eye washed with salt solution, replaced, and at end of ten days surface found to be perfectly smooth; no adhesion.

Case No. 3.—A deep sloughing ulcer on the cornea of left eye, caused by burn from a hot cinder. In spite of treatment Descemet's Membrane began to bulge, and perforation was imminent. The ulcer was lightly curetted, and doing so perforation occurred and aqueous escaped. Egg membrane sufficiently large to cover the anterior portion of eye was applied. Atropine was instilled, lids closed, both eyes firmly bandaged, and patient put to bed. On the third day the eye was opened and examined. No pain or irritation. Anterior chamber reformed. Iris free, pupil dilated, ulcer healing. Egg membrane and eye cleansed with salt solution, membrane replaced, eye bandaged. At end of second week ulcer sufficiently healed to remove membrane.

Case No. 4.—Iridectomy for recurrent iritis, complicated with dacryocystitis. Before operation the conjunctiva, lachrymal sac, duct and nose were irrigated with Hydrag chlor. corros. solution 1 to 10.000. As soon as the iridectomy was performed and eye cleansed, a piece of egg membrane was placed over the incision sufficiently large to extend well up under the upper lid and down over the cornea. After it was placed in position both eyes were bandaged. As there was no evidence of pain or irritation they were not opened until the third day. Membrane removed. Wound healed and no infection.

From the above cases and results obtained from the egg membrane the following are its advantages:

That it is easily obtained, easily applied, produces no pain or irritation, and is aseptic (providing egg is fresh), secretions do not act upon it, can be removed, cleansed and replaced; it is firm and elastic, and adapts itself to the parts wherever applied.

In Cases No. 1 and 2 the mechanical and therapeutic action was that it prevented the two raw surfaces from uniting, and gave the surface time to granulate and conjunctiva to form.

In Case No. 3 it sealed the ulcer, thereby preventing the escape of aqueous and anterior synechia, gave the ulcer support, and prevented infection.

Case No. 4. The mechanical action in this case was to seal the corneal incision against infection.

In conclusion, I believe this membrane has a wide field of usefulness in ophthalmic surgery, in corneal fistulas, in preventing prolapse of iris, in simple extractions and preventing infection of corneal and scleral wounds.

PYOKTANNIN (BLUE) FOR OPHTHALMIA NEONATORUM.

BY L. R. CULBERTSON, M.D.

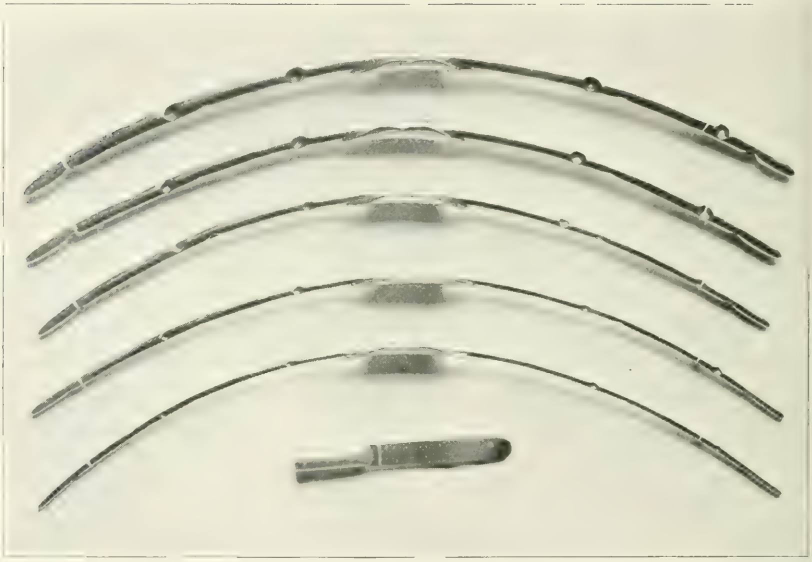
ZANESVILLE, O.

Oculist to U. S. Pension Bureau, C. & M. V. and B., Z. & C. Rys., City Hospital, etc.

Pyoktannin (blue anilene, Mercks) has been used a number of years as a germicide in ocular affections, but in the literature at my command I find nothing on its use in ophthalmia neonatorum or gonorrhœal ophthalmia in the adult. It has been used for some time in gonorrhœal urethritis, vaginitis and metritis.

I have only one case to report and trust that others will obtain as quick results.

The case was seen by the writer some five or six days after its birth. Marked case of purulent ophthalmia. The attending physician had painted lids of both eyes for several days with 3 per cent. nitrate of silver solution, with no benefit. I painted lids for two days with 4 per cent. solution of silver nitrate, with no benefit. Then stopped silver nitrate and used $\frac{1}{2000}$ pyoktannin (blue) injected under lids. Used an all-rubber bulb ear syringe. The nozzle was first smeared with vaseline and then one bulbful of the solution was injected under upper lids every two hours, night and day. The nozzle was pushed up to the upper *cul-de-sac.* Cold cloths were applied to lids every twenty minutes and eye drops containing atropia sulph., cocaine and morphine were used every two hours. Within thirty-six hours after beginning the pyoktannin all discharge had ceased the swelling and inflammation subsiding rapidly. One cornea ulcerated, for which eserine was used and cocaine drops used less often. The injections of pyoktannin were stopped after three days use, as all discharge had ceased. About six drops of pyoktannin were instilled three times daily until ulcer healed and cocaine and atropia discontinued. At the time of writing—twenty-one days from the first time I saw it—the cornea



is healed and only a faint nebula remains, which is clearing rapidly. The parents deny gonorrhœal infection, and as a bacteriological examination was not made I cannot say whether this was a case of gonorrhœal, leucorrhœal or grippal ophthalmia. The mother was suffering from grippe before and after the birth of the child.

The advantage of pyoktannin is that it is bland and unirritating and at the same time a powerful bacteriacide. Nitrate of silver causes suffering and produces great swelling of the lids. If pyoktannin will do as well in the majority of cases as it has in this one, then we will know that we have in it a most powerful and effective agent for the cure of this affection. The general practitioner or the ophthalmologist can instruct the nurse in the use of pyoktannin injections with the bulb syringe the instant any pus appears about the eyes of the infant. I trust others will try this remedy and report the results of its use.

TREATMENT OF DISEASES OF LACHRYMAL DUCT BY CATAPHORESIS.

BY GEO. F. KEIPER, A.M., M.D.

Eye and Ear Surgeon to St. Elizabeth Hospital, St. Joseph Orphan Asylum, Children's Home, Indiana State Soldier's Home, etc.

LA FAYETTE, IND.

Illustrated.

Definition.—Cataphoresis, a process of forcing medicament into living tissues by the constant electric current.

Physics of Process.—By putting the positive pole into a denser medium and the negative in a lighter medium, separated from the denser by an animal membrane and turning on the current, the denser will travel through the membrane into the lighter in direct opposition to osmosis ordinarily observed.

Physiology of Process.—Many remedies may be forced into tissues by placing them at the positive pole of the battery and the negative pole at an indifferent point close by; *e. g.*, cocaine, aconite, chloroform, etc.

Application Therapeutically.—Cupped sounds exhibited. The medicament preferably, argentum nitratum or protargol in vaseline are put in the cups. The probes introduced in the regular way, then connected to the positive pole of the battery by universal connector shown. The patient holds the negative electrode in the palm of the hand. Three to five milliampers of current turned on for five minutes, and the medicament is thus forced into the tissues of the duct.

Results.—Purulent inflammations of the duct and sac yield better to this form of treatment than any of the older methods.

VARICOSE VEINS IN THE ORBIT.*

BY R. DENIG, M.D.

NEW YORK.

Similar cases have been occasionally described—one of the first by Dr. Gruening, New York. These cases have been classified according to the location of the varix : First class of cases, in which the varix is situated behind the eyeball ; second class, in which the varix is situated more anteriorly, near the top of the eyeball ; third class, in which it is situated on either side of the eyeball.

In the first class of cases the varix cannot be seen or palpated, but produces an exophthalmus, when the patient pronates the head, or upon compression of the jugular veins or on closure of the mouth and nostrils.

In the second class the varix is palpable and also mostly visible, and exophthalmus is likewise produced. In the third class of cases, in which the varix is placed laterally, the varix protrudes on pronation of the head, but the exophthalmus is not seen.

In some cases a slight degree of enophthalmus has been noticed in the erect posture of the patients. This has been explained by the theory, that the abnormal filling and emptying of the varicose veins causes a relaxation of the ligamental structure of the orbit and an absorption of the orbital adipose tissue.

Regarding the differential diagnosis it is often very difficult, to exclude a cavernoma of the orbit. But we would hardly expect a cavernoma in cases in which the tumor exists for a longer time, and where there are no signs of a compression of the optic nerve or retinal vessels, although one case of optic nerve atrophy, caused by rupture of varicose veins and orbital hemorrhage has lately been described. Neither would we expect a cavernoma in such cases, in which the exophthalmus perfectly disappears or even a slight degree of enophthalmus becomes manifest in erect posture.

As to the etiology, the theory exists, that a congenital predisposition of the orbital veins (supra-orbital vein) may cause the varix. It has been suggested that the venous walls are congenitally deficient. Perhaps a

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*Case presented before the *Academy of Medicine*, of New York. Section on Ophthalmology. January 16, 1899.

congenital abnormal narrowing of the superior orbital fissure may be an etiological factor.

In my case the tumor began one year ago. The case belonged to the second class of cases mentioned above. The tumor of the varicose veins is slightly prominent ; it is near the top of the equator bulbi, and can be easily palpated. There is a slight degree of enophthalmus in erect posture, a slight ptosis, no paralysis of any muscles as has been described in some few cases. Both optic nerves are perfectly normal, there is no hyperemia of the retinal vessels present. No cause of the beginning of the trouble can be ascribed by the patient. No family history. Patient is about fifty years of age. General health is said to be in good condition. There are two other small varices on the underlip of the size of a pea ; they are said to be congenital. Patient has been suffering from hemorrhoids for the past three years and has had a varix on the left leg for about six years, which finally disappeared about two years ago.

There is one thing quite exceptional in this case : As already stated, the varix ought to produce an exophthalmus, as it belongs to the second class of cases mentioned above. But on pronation of the head a swelling of the varix only and no exophthalmus takes place ; the eyeball seems rather to recede than to protrude. Our explanation for this is, that the filling of the varicose veins is more pronounced anteriorly than posteriorly in our case, because in all probability the blood-vessels are more dilated anteriorly in this set of veins.

As regards treatment, bandages or injection of sesquichloride of iron and electrolysis have been proposed, in many cases extirpation of the varicose veins is the proper treatment.

ALBUMINURIC RETINITIS AS AN ELEMENT OF PROGNOSIS IN BRIGHT'S DISEASE.

BY F. T. ROGERS, M.D.

PROVIDENCE, R. I.

While the presence of albumin in the urine is sufficient to excite alarm for a patient's welfare, it must not be forgotten that it may be compatible with present perfect health; indeed many clinicians claim that there may be physiological albuminuria, meaning by the term, however, that while it is not a universal physiological factor, its presence and continuance may show no evidence of disease and must be regarded as physiological rather than pathological. Such conditions are found in many infants immediately after birth, in adolescents, in pregnancy and in those cases which are termed cyclical and intermittent; yet in general, as stated by Osler, "The presence of albumin in the urine in any form and under any circumstances must be regarded as indicative of change in the renal or glomerular epithelium."

Such doctrines have been taught to most of us and represent our belief to-day that albuminuria indicates a morbid process going on in the kidney and, when associated with other signs of Bright's disease, the prognosis is unfavorable.

When one is forced to admit to patient or friends the existence of a grave disease like acute or chronic nephritis one of the first questions asked and one of the hardest to answer is, "How long will it be before the fatal termination?"

I have been led to study the cases of albuminuric retinitis which have come under my care during the last five years and to review the literature of the subject in order to discover whether the presence of this complication of Bright's disease affords us any definite knowledge of the probable duration of the disease.

The form of retinitis associated with albuminuria occurs usually in the chronic forms of kidney disease and is noted rather as a confirmation of diagnosis than indicative of it, but it not infrequently happens as in several of my cases that the uremic symptoms, such as headache, nausea, vomiting and frequent micturition, have not sufficed to call attention to the seat of the disease until sudden failure of sight revealed the condition. In severity it varies from slight impairment of sight to complete blindness. The first stage of the disorder as seen by the ophthalmoscope is evidenced by an increase in vascularity. The retina for a space of 3 to 5 mm. around the disc becomes swollen, fine vesicles of a grayish color appear, the retinal veins dilate unequally and grow tortuous while the arteries contract.

In certain cases, as in scarletinal nephritis, the condition may not progress beyond this stage and ultimate recovery may occur, but if resolution does not occur there appear numerous whitish spots and points of extravasation of blood in the retina. Some of the white spots noted in a typical case may be atrophic, but certainly some are not, as they have been noticed to increase while under observation without any hemorrhage.

The picture of albuminuric retinitis is one so characteristic that one often hazards the diagnosis of nephritis even before a careful urinalysis is made. In making such a diagnosis, however, it must not be forgotten that exactly similar ophthalmoscopic appearances have been seen in diabetes and descending neuritis and described by Jaeger, Græfe and Bonschut and it is well not to make a diagnosis without confirmation.

Both eyes are usually affected, indeed some authorities say always, but there are recorded numerous cases of unilateral retinitis differing, however, in no marked degree from the usual types.

. The nature of the kidney lesion in a measure determines the character of the retinitis which, according to Earles in the *Birmingham Medical Review*, accompanies 33⅓% of cases of Bright's disease. Although the characteristic and severer forms are not so frequently found, the disturbance of circulation and retinal changes which lessen visual acuity are undoubtedly present in even a larger proportion of cases, and a careful and systematic examination of the eye ground of all patients suffering from any form of Bright's disease would afford valuable information to both physician and patient, while adding somewhat to the sum of human knowledge, the privileged task of the physician and the one thing making our profession a learned one and not a trade.

We must make a distinction between the albuminuric retinitis of Bright's disease and that occurring in pregnancy, as well as the amaurosis of uremia which has not the same prognostic value. The albuminuric retinitis of pregnancy has been noted as early as the third, but more frequently in the later months of the pregnancy. In these cases an added importance is attached to the condition regarding the advisability of the induction of premature labor. According to Howe in the *American Journal of Ophthalmology* this procedure is indicated only in the early months, and Randolph concludes from personal observation that retinitis occurring during the last seven weeks of pregnancy is of less import in so far as sight is concerned, and does not call for induced labor inasmuch as statistics show that in many cases sight is restored. Silex, in *Annales d'Oculistique*, 1895, states that in twenty-six patients with albuminuric retinitis of pregnancy eleven recovered more than one-sixth vision and ten a lesser degree, while only five were blind, and concludes that the condition of the retinal vessels should decide the question of interference.

Roosa states that in uremic amaurosis there is absolutely no ophthalmoscopic change. Such certainly may be the case, but exception may be taken to such a sweeping assertion, as many cases testify.

Albutt, in his work on *The Ophthalmoscope in Diseases of the Kidney* (London, 1871), calls attention to this difference between albuminuric retinitis and uremic amaurosis, and states that the second may completely pass away as the other uremic symptoms subside, or may complicate and be secondary to the graver form.

The universal prognosis is grave. Noyes, quoting Bull (103 cases), states that 50% died during the first year, the majority in six months, and 17% in the second year.

Schmidt-Rimpler says: "Death occurs in from a few months to one or two years."

Norris and Oliver say the prognosis is always bad save in acute cases, and death may be expected in a few months.

Bearing in mind that the retinitis never precedes nephritic degeneration, although frequently a symptom which calls attention to the condition, we are prepared to consider its prognostic value, not in those cases occurring after scarletina or during pregnancy, but solely in chronic Bright's disease.

Aside from hospital reports there are at hand few statistics upon the subject, and beyond the report of Belt before the Ophthalmic Section of the American Medical Association, no attempt has been made to draw conclusions from statistical tables. Individual cases of prolonged life after retinitis is noted are reported as exceptional cases from the general rule and, as such, worthy of record.

Belt, in the paper quoted, endeavored by personal correspondence with ophthalmologists to learn the average duration of life of patients seen in private practice suffering from this form of retinal disease. He reports 100 cases whose subsequent history was traced two or more years. Of these 10% died in three months, 42% in six months, 21% in twelve months, 5% in eighteen months, 6% in two years, 6% lived over two years. Summarizing: 73% died within a year; 94% died within two years.

Combining with his own statistics the findings of Hartridge (5 cases), Anderson (3 cases), Snell (8 cases), Possaner and Haab (39 cases), he found that 62% died in one year, 85% in two years.

Of hospital cases, the reports of Possaner and Haab, Miley, Bull and Gruening (187 cases), 65% died within one year and 93% within two years. Of the total (419 cases), 72% died in one year, 90% within two years, and only 9% lived over two years.

Of the physicians who responded to Belt's inquiries, Callan of New York had seen a case which lived nine years; Stevens of New York, eleven years; McKay of Washington, three and one-half years; Young of Burlington, five years. All the rest stated that their cases had not lived two years.

I have records of eighteen cases and but four are living, and of these but one has been under observation for more than two years. The other three were seen respectively five months, four months and two months ago. One patient is known to be dead, but the exact length of time which elapsed after the retinitis developed before death occurred is unknown, but it was within two years. One patient died three years after the onset of the retinitis. There are, therefore, fifteen cases whose histories are known which have been under observation for at least two years. Of these but one is living. They may be tabulated as follows :

	Died within few days.	Died within three months.	Died within nine months	Died within twelve months.	Died within eighteen months.	Lived more than 24 months.
Mrs. W. C.				1		
Mrs. J. C.		1				
F. T.					1	
Mrs. A. D.			1			
J. Q.					1	
G. J. W.		1				
E. C. D.					1	
E. H. R.			1			
E. D. D.						1
W. L.	1 (one day)					
Mrs. H. W. L.		1				
Mrs. L. B. T.				1		
A. J.	1 (one day)					
Mrs. E. T.		1				
E. P.						1
Total	2	4	2	2	3	2

Died within few days	13.3%	Lived over two years	13%
Died within three months	40%	Died within one year	66%
Died within nine months	53%	Died within two years	86%
Died within twelve months	66%	Lived over two years	13%
Died within eighteen months	86%	Lived over three years	6%

Comparing these results with the final statistics of Belt of 419 cases, the percentages are not dissimilar. Of my cases 86% died within two years and 90% of all, 13% lived over two years and 9% of all.

Three or four of the cases are peculiarly instructive.

Mrs. T. was first seen in 1891, when there was, with a correction for myopic astigmatism, a vision of 0.5 in each eye. In November, 1897, she was again seen with 0.5 vision in right eye, but with only 0.2 in left eye, and with well marked albuminuric retinitis in that eye. Her physician had not previously detected evidence of nephritis. The urine was examined and albumin found in large quantity. Two days later the right vision had dropped to 0.2, the left to less than 0.1. A decidedly unfavorable prognosis was given to the family physician, which, however, was not accepted. On January 16, 1898, she died suddenly in uremic coma.

A. J., with history of kidney disease, had been treated by a homeopathic physician for a month for anemia. Following a sudden failure in sight to less than 0.1 he was sent to me for examination. Well marked albuminuric retinitis with abundant and fresh hemorrhages was found in each eye. Unfavorable prognosis was given, and at the request of the physician I sent him to the Rhode Island Hospital. He died the next day in uremic convulsions.

Another case seen in consultation died the following day, and although there had been great loss of vision the urine had been examined but once, and because a negative result had then been obtained, it was not thought worth while to make a second one.

A fourth case occurred in which there had been no suspicion of Bright's disease till failing sight and a retinitis called attention to it.

These cases serve to show the value of a careful examination of the eye-ground in all cases of suspected or existing nephritis.

E. C. D. was first seen in September, 1897. He gave a history of albuminuria in greater or lesser degree for three years. There was then present an ulcerative keratitis and active neuro-retinitis of the right eye and a retinitis of the left, vision being reduced to large objects. Albumin, 1.8 per cent. A month later the amount of albumin was 2 per cent, with greater loss of sight. From October to December, under a strict diet, the eye symptoms gradually improved. In December he fell into the hands of a quack, who promised him a complete and speedy cure and, to do him justice, there was a marked improvement in both the general condition and in the eye, and the patient soon resumed his business. During the next six months he was seen occasionally and apparently well, although the vision was impaired. November, 1898, he developed uremic coma and died.

In my experience these cases are all similar. But one of the cases seen two or more years ago is still living and the three now under observation I have no reason to believe will be exceptions to the rule.

The result of the statistical study is, therefore, briefly, that about seven patients out of ten who develop an albuminuric retinitis during the course of either of the three forms of chronic nephritis, will die within a year, and nine out of ten within two years.

"FOREIGN BODY IN THE IRIS THIRTY-TWO YEARS."

BY M. T. JAY.

PORTLAND, IND.

Mr. Moore, age 44, consulted me in regard to his right eye September 18, 1897. Slight iritis, photophobia quite severe, considerable injection of subconjunctival vessels. The patient being a very intelligent man, gave the following clear statement of his case: When he was eleven years old—thirty-two years ago—he was walking one day from his father's barn to the house, holding in his left hand a small piece of stone and in his right hand a hammer with which he was tapping the stone. Suddenly he felt a stinging sensation in his right eye, with severe pain following. He covered his eye with his hand and rushed to the house, where his mother bathed the eye and resorted to other domestic remedies. He says his eye was "sore" for two months, but finally cleared up and that he never had any more trouble or had anything happen to his eyes in any way. States very positively that his eye has not received any injury since that time.

The winter preceding his visit to my office he states he had a mild attack of "sore eye," but that it quieted down again and remained so until two weeks prior to his visit. It then became painful, and in the condition I find upon examination. Eye is very sensitive to light, and somewhat painful, iris responds only feebly to light, and retains a round pupil. On temporal side of iris is a small grayish body as large as a pin head, partly embedded in iris and partly held by minute bands extending from posterior surface of cornea. Over the body is a faint nebula extending through entire cornea, showing the wound of entrance. Around the body the iris is much absorbed, so that while I have said the body was embedded in the iris, it is really held in place by very fine fibrous bands, showing that the absorption has taken place through the whole thickness of the iris. The body is perhaps twice as long as it is thick, with the long axis extending through the meshwork, the result of absorption.

I have examined this patient several times since, and while the inflammation has subsided, there is still a slight photophobia and the body, whether it is a chip of stone or a piece of the hammer, can be very plainly seen. Advised an operation, but patient thinks he will wait awhile.

REPORTS OF SOCIETIES.

THE LOUISVILLE OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

Stated Meeting, March 11, 1899.

The President, Dr. J. M. Ray, in the chair.

Dr. Adolph O. Pfingst reported a case of *Herpes Zoster Ophthalmicus.* (See page 217).

Discussion.—Dr. W. B. Pusey remembers to have seen one case of this character. He thinks if the iris were not involved, that eserine would be of more advantage than atropine, because you want to shut out as much light as possible where the cornea is involved.

Dr. T. E. Converse has only seen a few such cases, and in all except one of the four or five, there was a marked history of rheumatism. Under the administration of the salicylates the pains as well as the herpes disappeared. He used eserine instead of atropine in the eye. In one case only was the cornea involved; the conjunctivæ were involved in some of the cases; in one of them only the upper lid.

Dr. A. W. Smyth saw one case of this kind in the clinic of Doctor Knapp when in New York last fall, in which there was a herpetic eruption upon the cornea, and has also seen one case here since.

Dr. Wm. Cheatham has seen a good many cases of *Herpes Zoster* about the eyes and face. The eruptions upon the conjunctiva are similar to those on the skin; they do not rupture, but dry up. A great many causes have been assigned for *Herpes Zoster Ophthalmicus.* He saw one case that he was sure was the result of an error of refraction. The patient had two or three relapses, when change of glasses would be followed by complete relief. According to recent literature some of the cases result from bad teeth. He thinks in Doctor Pfingst's case the trouble might have been the result of pregnancy, and delivery of the child has relieved her of all the after effects, because sometimes the pain is greatest after the eruption has disappeared.

As to the pathology of herpes: It is looked upon as a vaso-motor paralysis with dilatation of the vessels. Woakes, of London, advises camphor internally and locally for the cure of the tobacco habit, which he claims to be a vaso-motor paralysis as a result of the nicotine poisoning; and the pathology of herpes being the same, camphor has been used internally and externally with good results. But in the stage of pain it is said that quinine is better. According to the latest investigations in regard to quinine by Holden, it would answer in these cases very well by contracting the blood vessels. If it is due to a vaso-motor paralysis with dilatation of the vessels, and quinine contracts the vessels, it would seem to be indicated in these cases.

Dr. Cheatham's treatment would be galvanism, phosphide of zinc, camphor and quinine; he would correct any irritation about the nose or teeth, especially if it is about the fifth nerve. He does not believe he would use eserine. If there is any photophobia the cause must be in the deeper tissues. He does not see how you could get any photophobia from involvement of the cornea when the cornea itself is anesthetic; we can have paralysis of the sixth and seventh nerves: we might have actual ptosis. He would be on the lookout for iritis, and would rather use atropia than anything else locally.

Dr. A. O. Pfingst: The atropine was used in this case as the pupil at one time showed a marked tendency to contract. The books speak of diminished tension in this condition which would hardly indicate the use of eserine. In most cases there is no occasion for the use of either a myotic or a mydriatic.

As to the pathology, we believe there is some direct lesion in the nerve itself, as we find it usually confined to certain nerves or branches.

Dr. J. M. Ray: Cases of *Herpes Zoster Ophthalmicus* are interesting, and in his experience persistent in their annoyance for a long time. He has in mind a case in which the local condition in the conjunctiva and cornea was severe, and even now, eighteen months after the attack, the neuralgia persists. He watched this case carefully for the eye lesions. A bleb appeared on the conjunctiva and the cornea became steamy over a circumscribed area, and lost its epithelium, but no bleb showed itself on the clear cornea.

The most annoying part of this case to treat was the tingling pain extending down the side of the nose, the corneal anesthesia and the lachrymation. Large doses of the iodide, galvanism, etc., were tried without avail. Most relief was obtained by a mild faradic current applied over the distribution of the fifth nerve.

Dr. A. W. Smyth read a report on *Subconjunctival Injections in*

Interstitial Keratitis and Sclero-Keratitis. He said that since their introduction into ophthalmology as a remedial measure about thirty-five years ago, they have been more or less extensively employed with varying degrees of success.

This subject was revived about seven years ago, since when it has, like every new procedure when first announced, had to go through several stages of development. At first, owing to excessive enthusiasm, they were recommended for nearly every disease of the eye; then followed a reaction, and they were deemed of no use whatever, until at the present time he thinks they have found their true position in ophthalmic therapeutics and are of undoubted value in chronic and relapsing infiltrative diseases of the cornea, iris and ciliary body. He said this could be proved theoretically, experimentally and practically. The fact is now established that the cornea is traversed by anintricate system of lymph lacunæ connected by delicate canaliculi which communicate at the sclero-corneal margin with the lymphatic network of the sclera. Thus it is evident that the exact sight of the morbific lesions can be reached through the lymph channels, and any remedial measures brought to bear on this system must necessarily influence the disease.

That sub-conjunctivally injected fluids have this lymphagogue action has been shown by the latest experiments of C. Mellinger on rabbits, thus causing complete absorption of an injected emulsion of India ink. The explanation of this result has been given as follows: certain crystalline substances among which chloride of sodium stands first, withdraw water from the tissues in proportion to their molecular composition and to the strength of the solution. Sub-conjunctivally injected, it enters the lymph spaces of the eye and tends to extract an excess of fluids from that organ. Thus is induced a more active elimination of the elements of decomposition, necessarily bringing about a more active supply of new nutritive substances from the blood, which naturally results in a more rapid reformation of the changed tissues.

He reported two cases showing the benefit of this method of treatment. Case 1, Mr. S., 30, had rheumatic iritis and sclero-keratitis which had resisted the ordinary remedies for seven months. Then a sub-conjunctival injection of a 1 to 3000 bichloride solution was made and repeated in five days. Ten days later the eye was perfectly free from inflammation and in a better condition than it had been for seven months, vision 20/20—. Case 2, Mrs. A., had rheumatic iritis last spring, that yielded to treatment in two weeks. In November a relapse occurred and with it a sclero-keratitis which persisted over two months. A sub-conjunctival injection was made, with improvement in two days. This was repeated in one week with the result that two weeks later a small area of darkish discoloration was all that represented the location of the inflammation.

It is very rare that more than a slight thickening of the conjunctiva results even after a large number of injections.

Following injections of a bichloride solution is a burning sensation in the eye, and some headache for a few hours; this however may be greatly relieved by hot applications. The sodium chloride solution, on the other hand, gives practically no discomfort, and is probably just as beneficial as the results obtained are from the lymphagogue action rather than from any specific action of the bichloride.

Discussion.—Dr. C. Joyes has used sub-conjunctival injections of bichloride in two or three cases, but the results were not such as to encourage him in their use.

Dr. Wm. Cheatham has not used sub-conjunctival injections recently. He used them persistently for a while, but never had results that justified their continuance. He has gotten better effects from such injections in some forms of iritis than in the various forms of keratitis. He has used the normal salt solution, also solutions of bichloride; his experience has been that the patient complains of a great deal of pain from the bichloride. He has also used pilocarpine, and has gotten good results from this, either alone or combined with salt solution. He thinks the biniodide of mercury would be better than the bichloride; it coagulates less and the effect would be quicker. The cyanide of mercury is soluble and would also be better than the bichloride.

Dr. T. E. Converse three or four months ago mentioned the case of a child fourteen months old that had an ulcer of the cornea. The child had acquired syphilis, having contracted it from a colored nurse, the chancre appearing on the side of the nose when it was three months old. When it was fourteen months old an opacity of the cornea formed resembling interstitial keratitis. In that case he tried the bichloride of mercury internally, and also inunctions of mercury, but it did not improve. He then gave four sub-conjunctival injections of bichloride 1.5000 two weeks apart without improvement, and had to discontinue it as the mother complained of the pain it caused the child. He combined a little sodium chloride with the bichloride solution, which did not cause so much pain. He gave the child four or five more injections, and the condition commenced to clear up, and now there is only a slight haziness of the cornea. He has not used this method of treatment in other eye troubles.

Dr. S. G. Dabney has not used sub-conjunctival injections to any extent. Several years ago when this method of treatment was most written about he used it in a few cases, but did not see much benefit from it in scleritis and keratitis. He has never used it in the deeper seated affections. To tell the truth he has been a little skeptical about it, and has not been inclined to believe a good many of the favorable reports. Certainly Dr. Smyth's case sounds like there was something in this treatment.

Dr. J. M. Ray began using sub-conjunctival injections several years ago. He tried them in a large number of cases in his clinic at the University of Louisville, and also in private practice. Dr. W. O. Bailey, when with him, read a paper on the subject, reporting several cases that we had treated in this manner. From that time to the present he has used this method in obstinate cases of interstitial keratitis, relapsing episcleritis and sclero-keratitis, conditions which we all know are so very persistent and obstinate to treatment. In drifting around he tried sub-conjunctival injections in these cases, and it has done more good than anything else.

He can recall two cases, the history of which he gave to Dr. Bailey when he read his paper on the subject where decided beneficial results followed this method of treatment. One was a young lady sixteen years of age, who had a persistent interstitial keratitis; the cornea eventually cleared up fairly well; following this she had a scleritis with marginal opacity of the cornea. It looked as if the eye was going to be lost by reason of the development of a large scleral staphyloma. In desperation we commenced sub-conjunctival injections of bichloride, 1.5000, and after four or five injections the condition improved even beyond our best expectations. From that time to this Dr. Ray has in certain cases practiced sub-conjunctival injections. In cases of interstitial keratitis in children from eight to twelve years of age he hesitates about using this treatment because of the discomfort it entails. After the first injection you have to struggle with the child in order to get it to submit to further injections.

He has often used this method in cases of rheumatic iritis and rheumatic sclero-keratitis with good effect. In such cases the pain is lessened and the iris responds more rapidly to the mydriatic.

He believes that there is a place for sub-conjunctival injections in ophthalmic therapeutics. He has yet to see a case in which he regretted their use, and he shall certainly continue to use them in selected cases.

Dr. A. W. Smyth: In the chronic, persistent, and obstinate cases that

Dr. Ray has mentioned, the injections have been of decided value. There has been marked improvement in some of the cases under injections of the salt solution, there is practically no pain, and the patient is willing to undergo the second or third injection. We have seen no bad results following this method of treatment. Of course, if you strike a small vessel in making your puncture, you might have a small sub-conjunctival extravasation of blood, but that soon clears up and patients seem to be benefited a great deal by this method of treatment.

Dr. Wm. Cheatham reported a case of *Leuco-Sarcoma of the Choroid*. The patient from whom this eye was removed came to this city in December, 1898, for the purpose of consulting Dr. Cheatham. She did not report, however, until five days ago. She was an intelligent woman and had watched her own case closely. She had noticed only for a short time that her eye was defective. When Dr. Cheatham saw her it was blind. There had never been great pain. The eye appeared glaucomatous, and tension was increased. He found the inner part of the retina attached; outwardly the vitreous appeared about three-fourths full of a yellowish-looking mass, showing through a detachment. The eye was removed this afternoon. The specimen is before you. It appears as a light yellowish mass springing from the choroid on the temporal side. He cut the nerve long, and left considerable tissue on the sclera. You see now the rounded mass occupying the greater part of vitreous and to inner side of the nerve, a black mass has presented on the outside of the sclera. He took it to be a leuco-sarcoma.

He has had a run on growths of the eye within the last twelve months, and has two or three other specimens where the growths were extirpated. This woman told him that the first symptoms were noticed a few months ago. She is forty-two years of age, with a history of no disease in the family, but he believes pathologists now say that cancer is not inherited.

Discussion.—Dr. S. G. Dabney: The growth in this case was exceedingly rapid, as it was first noticed but five months ago. Dr. Dabney presented a specimen to this society some time ago similar to the one shown by Dr. Cheatham, but in that case there was a typical course, the disease having lasted for eighteen months.

Retinal Glioma.—Dr. J. M. Ray showed an interesting specimen, but unfortunately very little clinical history. It was sent him by a friend in the country who says it was removed from a child three years old. The reason for removal being great exophthalmus, blindness and pain. The family did not know how long it had been developing; no family history was sent. The specimen as received by Dr. Ray was the eyeball with an external mass one-third the size of the globe encircling the optic nerve. The specimen was frozen and divided; he found a yellowish and brownish streaked mass filling the entire globe. The lens is pushed aside, and its edge presents toward the cornea. The mass has invaded the iris and fills the anterior chamber. All the normal elements seem invaded by the neoplasm. The cornea is intact and externally presents its normal curve. The growth perforated the sclera at the posterior pole around the optic nerve. The growth rapidly returned in the orbit and now, five months after its removal, he understands is rapidly extending. He presents the microscopical history kindly made by Dr. Pfingst.

The microscope shows the entire eyeball filled with tissue made up almost wholly of round nuclei around which no protoplasm is visible. Between the cells a scant amount of granular intercellular material is seen. The neoplasm has perforated the sclera on both sides of the optic nerve and invaded the nerve trunk. It has also infiltrated the cornea and sclera, particularly the latter, so that bands of scleral and choroidal tissue can be seen stretching through its substance. The iris is intact, the tumor projecting through the pupil and filling the entire anterior chamber. The new formation is rich in thin walled blood vessels and contains a large number of hemorrhagic areas. Variously sized areas of degeneration (fatty) some quite extensive, are scattered throughout the tissue. As the specimen was not fresh enough to be examined by the modern staining methods (Golgi, Mallory), it was examined only after the common hematoxyln-eosin method. Yet the abundance of nuclei without visible protoplasm surrounding them, the scant amount of intercellular material, rich blood supply and the degenerated areas along with the macroscopic appearance would indicate almost with certainty that you had to deal with a case of Glioma.

Discussion.—Dr. Wm. Cheatham: Some years ago we had a family of gliomas in the city. A man had a large family of children, all apparently healthy; there was no history of cancer in the family upon either side. Several healthy children were born, then one which soon developed a glioma, and the eye was removed. Dr. Simon Flexner reported that the tumor was a new growth of the retina, not a true glioma. The baby finally died of softening of all the bones of the body. In the course of time another baby came, and that was healthy. Two other children were born later, both had glioma, and both died the same as the one previously mentioned, making three cases of glioma in one family.

Dr. T. E. Converse reported a *peculiar accident to the left eyelid.* The following case is of some interest on account of the peculiarity of accident and the excellent result following. A boy fifteen years old fell face down on a perfectly smooth marble surface and had cut or lacerated the upper lid of left eye. When Dr. Converse arrived at the place of the accident he found a cut one inch and a half long parallel to the margin through the upper lid just above the tarsal cartilage which had cut all the tissues through to the conjunctiva. The vessels were picked up and twisted. He pulled forward the elevator of the lid and stitched it with three catgut sutures to the upper edge of the tarsal cartilage and then closed the skin with four silk sutures and the wound was antiseptically dressed. Four days afterward the sutures in the skin were removed, but the catgut sutures are still buried. He saw him yesterday, ten days after removing sutures from the skin, and there is as good movement of the lid as of the right eye and there is not the slightest indication of ptosis. The peculiarity of this case is that there should have resulted such an extensive injury to the eyelid from a fall upon a perfectly smooth surface.

T. E. CONVERSE, M.D., *Secretary.*

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

ORDINARY MEETING HELD MARCH 9, 1899.

Implantation Cysts of the Iris.—Mr. Devereux Marshall read this paper, which he remarked was more of the nature of a demonstration than a set paper.

He recorded three cases of epitheliel cysts of the iris which he had recently examined and showed photographs in the lantern of the points of interest which each exhibited.

The first case was that of a boy aged 12 years, whose eye was wounded 8 years before. It remained quiet until 3 months before removal, since which time it has been painful and irritable. There was found to be a crescentic-shaped scar of the cornea to which the iris was adherent. At the bottom of the anterior chamber there was found a large cyst. On further examination the walls were found to be formed by the iris which is split into two unequal parts, the iris itself is so atrophied that at one place the wall is composed solely of epithelium.

The second case was that of a man aged 17, whose eye was wounded 7 years ago with a piece of wood, and it remained quiet until it received a severe blow two weeks before removal. A small cyst was then found at the upper and inner part of the A. C. The anterior wall of this was composed of an extremely thin piece of atrophied iris lined with epithelium and adherent to Descemet's membrane. Its posterior wall was composed of the greater part of the thickness of the iris, the epithelium was laminated and similar to that of the cornea.

The third case was that of a man aged 29 whose eye was wounded some years before and had recently become painful and quite blind. The eye was enucleated and in the A. C. was found a small mass near the inner corneo-scleral junction. It had developed in the muscular part of the iris. The cyst was found to be lined with epithelium which had undergone great proliferation, so much so that its cavity was filled with degenerated epithelial cells which had become shed, and having no place of escape had become collected together in the interior of the cyst, thus giving rise to the dense white appearance noted during life.

The epithelium in this case apparently arose from a portion of cutis which had become driven in at the time of the original accident, whereas in the other cases the epithelium of the cornea was almost certainly the cause of the cystic development.

The question of cysts in general was shortly discussed and some museum preparations of eyes illustrating the subject were shown.

Mr. Treacher Collins said that these cysts varied greatly in situation; they were sometimes found in the substance of the cornea, in the Anterior Chamber after cataract extraction and were occasionally caused by a root sheath of an eyelash being carried into the eye. They may be classified into pigmented and unpigmented, the former being due to a separation in the pigment layer of the iris, and the latter being either congenital or due to injury.

Green Vision in a Case of Tabes Dorsalis.—Mr. Work Dodd related the case of an artist, aged 32 years. In 1886 his sight was quite good, in 1891 he had diplopia, from which he recovered. His color vision remained good till 1897, and he complained of defective sight shortly before being seen in July, 1898. When first seen V. was R. $\frac{2}{60}$, L. $\frac{1}{60}$. He had Argyll-Robertson pupils, optic atrophy, and contraction of his visual fields, his gait was ataxic, and he had occasional trouble in passing water. In September, 1898, V. was reduced R. $\frac{1}{60}$ L. hand movements. He then saw everything a bright emerald green; it appeared to him as if there was a green veil hung before his eyes, through which he saw everything; he occasionally saw rose-pink spots through the green veil in places. The colors increased in intensity when he was tired, especially the rose pink. He had also occasional sensations of very brilliant light.

Albuminuric Retinitis in a Child.—Mr. Arnold Lawson and Dr. Sutherland read a further note on a case. A girl, aged 12, was exhibited before the Society last year with advanced albuminuric retinitis in both eyes, and symptoms of chronic interstitial nephritis. Two weeks after she was shown to the Society she had uræmic convulsions and absolute blindness, which lasted some days. During the next few months she had headache and vomiting, but no more uræmia. In September she was readmitted to the hospital for cardiac failure; death followed. The whole duration of the illness had been a year and three quarters. *Post mortem* both kidneys were found granular; the heart was hypertrophied, and there was a cerebral hæmorrhage into both ventricles. In the retina exudation of the usual type was found at the central region. Congenital syphilis was suggested as a cause.

Mr. Holmes Spicer thought that the suggestion of congenital syphilis as a cause was interesting. He had now under his care a female aged 20 who had interstitial keratitis with general arterial changes as well as albuminuria; she also had retinal hæmorrhages as well as retinal exudation.

Mr. Lawson replied that Dr. Gutherie's observations led him to believe that this condition is almost always due to congenital syphilis.

Strabismus Fixus.—Mr. E. Donaldson reported a case. A female aged 46 had had convergent squint since childhood; the deviation was so great that the left cornea was almost hidden; under an anæsthetic the eye could not be drawn out, and it was impossible to reach the internal rectus to divide it. The other eye was also fixed in a strongly convergent position, but it was possible to divide the internal rectus; by separating Tenon's fascia freely from the globe the position of the eye was much improved. Snellen had published some cases, all of which were congenital; the condition had been named strabismus fixus by v. Graefe, but the cause was unknown.

The following card specimens were shown:

Mr. Sydney Stephenson: *A case of Hippus.*

Messrs. Brailey & Eyre: *Case of Exophthalmic Goitre and Glaucoma.*

Mr. R. W. Doyne: *Peculiar form of Choroiditis occurring in several members of a family.*

Mr. John Griffith: *Serous Cyst of the Conjunctiva.*

Messrs. Lang and A. H. Thompson: *Two cases of Embolism of the Central Artery of the Retina with escape of the Papillo-Macular Triangle.*

Mr. Reginald E. Bickerton: *Haab's Magnet.*

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting March 21, 1899. Dr. George C. Harlan, Chairman, in the chair.

Dr. John T. Carpenter, Jr., exhibited *A Patient with Bilateral Extensive Choroidal Hemorrhage in the Macular Region.*—There was in each eye an extensive and nearly symmetrical area of atrophy of the retina and choroid, involving the foveæ. The cause was hemorrhage, occurring in the left eye three years earlier that in the right, from no assignable general cause. There was in each eye absolute central scotoma. The refraction was myopia and astigmatism. The correction that the patient was wearing was an inaccurate one, and she was obliged to use her eyes continuously at the near point, and it is probable that their prolonged and trying use was a contributing factor in the causation of her condition.

Discussion.—Dr. S. D. Risley stated that the two most interesting points concerning this case were the opportunity that had been availed of for the study of the changes from hemorrhage to atrophy of the fundus tissues, and the effect on myopic eyes of the use of badly fitted lenses.

Dr. James Thorington exhibited *A Patient with Congenital Coloboma of the Choroid and Iris in Both Eyes, Without Involvement of the Lenses.*—There was no family history of heredity of this anomaly of the eyes, of hare-lip, or of cleft palate. Each eye showed a large symmetrical cleft in the iris in its lower portion at an axis of 95°, and a broad coloboma of the choroid, extending from the ciliary body up to and embracing the lower half of the nerve, with pigmented edges and scattered areas of pigments, and supplied by a few cilio-retinal and one or two small retinal vessels. The charts of the visual fields are characteristic of the anomaly. No definite history of day-blindness was obtained. The refraction is mixed astigmatism, V. = R. $\frac{6}{50}$, L. $\frac{6}{15}$.

A study of the recorded cases shows that, while partial coloboma of the uveal tract is not uncommon, complete coloboma of the iris and choroid is rare, and it is in combination with the anomaly of the choroid that coloboma of the lenses occur.

Dr. Thorington exhibited for Dr. Oliver two colored illustrations, the first showing the external appearances of coloboma of the iris, the second of coloboma of the choroid. In the latter the vascular supply was entirely from cilio-retinal vessels.

Discussion.—Dr. de Schweinitz stated that he had seen two cases of coloboma of the choroid and one case of large coloboma of the optic nerve sheath unassociated with ocular defects elsewhere. Drs. Sweet, Carpenter, Risley, Ring, and Harlan also spoke of the various forms of coloboma presenting features similar to those of Dr. Thorington's patient.

Dr. S. D. Risley presented *A Patient Showing the Late Result in a Case of Implantation of Sponge in the Orbit after Enucleation.*—The operation had been performed in June, 1898, nine months before. There was no longer present any evidence of the sponge. Three months after the operation the orbit was well filled with new tissues, but during the succeeding six months this had been absorbed. A good and freely moving stump had been secured, but not better than is often seen after a careful excision.

Discussion.—Dr. Harlan said that at a recent meeting of the Oph. Soc. of Paris, Valude had reported a case in which a stump formed by implantation of sponge in Tenon's capsule had shrunk to one-third of its original size in one year. The consensus of the opinion of the meeting was that sponge implantation after eneucleation had been tried and found wanting.

Dr. Risley presented a brief paper on *The Employment of the Kalt Suture in Critical Cases of Cataract Extraction.*—The histories of three cases of cataract with tremulous iris and ruptured suspensory ligament were reviewed, in each of which the stitch had been introduced before making the corneal section. The vitreous in every case presented as soon as the section was completed, and the lens was extracted in the capsule by aid of the wire loop. Traction was then made upon the ends of the suture until the loop in the stitch was exhausted and the lips of the wound caused to approximate. Under this manipulation the vitreous was returned within the eye, completely in two cases, and all but a small bead at the outer angle of the wound in the third. Recovery was rapid and normal in each case. Dr. Risley believed that the procedure was, in cases where loss of vitreous was imminent, a very useful one.

Discussion.—Dr. Chas. A. Oliver had used the Kalt stitch in a case of traumatic irido-cyclitis and cataract. During the extraction of the right lens under cocaine a large bead of vitreous presented through the corneal incision. The stitch was introduced, the edges of the cut approximated, and the vitreous mass receded. The suture was then tied. The stitch came out on the fourth day, leaving a firm wound.

Dr. Risley gave briefly the history of *Recurrent Rheumatic Iritis* of a severe type occurring in a man aged 35, with compound myopic astigmatism, in whom recovery had been secured, after repeated attacks, with normal acuity of vision, and without any increase in the myopia. After recovery from the last attack it was noted that a segment of the iris below did not react. The pupil was perfectly round when dilated, but after the influence of the mydriatic had disappeared was pear-shaped. Dr. Risley thought the condition was explained, not by a paralysis of the iris fibers, but by an adhesion between the capsule and posterior surface of the iris, too far back to be demonstrated, but sufficient to prevent expansion or contraction of the segment involved.

Dr. G. E. de Schweinitz presented the history of *A Case of Fistula of the Orbit ude to Caries of the Lacrymal Division of the Ethmoidal Cells*, and described the operative procedures performed by himself and Dr. Walter J. Freeman for its cure.

Discussion.—Dr. Zentmayer related a case of Dr. Wm. F. Norris, in which the operation consisted of crushing through the ethmoidal bone from the orbit. The result was the permanent cure of the fistula. Dr. Harlan referred to the case of a boy of 9 years of age, in which an epiphora of the right eye of some months' duration was followed by the appearance of a bony swelling the size of a split pea above and slightly posterior to the lacrymal sac. The nose had been badly broken six years before, the septum deviated to the right side, and the nares obstructed. After incision several drams of a black fluid escaped from a cavity with smooth walls, apparently lined with mucous membrane which did not communicate with frontal or ethmoidal cells. There was rapid cure, without deformity, and with complete disappearance of the epiphora. Dr. Carpenter referred to a case of fracture of inner wall of orbit with closure of lacrymal duct, in which drainage into nose and prolonged probing failed to cure. Rhinologic examination showed disease of ethmoid cells, but patient passed from under observation.

Dr. Wm. Zentmayer showed *A Case of Tumor of the Orbit with Secondary Involvement of the Lymphatics* in a 5-year-old child. Six weeks earlier a bloody tumor over the right parietal bone had been incised and tapped. There was protrusion of the right eye, but no cerebral symptoms. The skull is enlarged, the sutures and fontanelles open, and the veins of the forehead and lids dilated. The enlargement of the lymphatics is most marked in the right cervical chain. Knee-jerk diminished on the left side. Examination of the blood shows intense secondary anemia. The right eye is proptosed 1 cm., and cannot be replaced. The outward movement is abolished, and the upward limited. Pupils normal. In the right eye there is choked disk, with minute hemorrhages and marked striations of the retina in the macular region; and in the left eye optic neuritis.

Dr. G. C. Harlan, in a paper entitled *Abscission and Combined Keratectomy*, urged the more frequent performance of abscission of the cornea as a substitute for enucleation of the eye when the disease or injury is confined to the anterior segment of the ball. This operation was formerly done with entirely satisfactory results in many cases which to-day would be submitted to enucleation with the result of unnecessary deformity and annoyance. Panas' "combined keratectomy" differs from the Critchett operation chiefly in placing the incisions and sutures in front of the ciliary body instead of behind it, and seems to be an improvement over former methods. The application of this procedure to cases of painful absolute glaucoma is an important advance.

Dr. Harlan also showed *A Patient in Whom a High Degree of Myopia had Developed Without Changes in the Fundus.*—She was examined under complete mydriasis fourteen years ago, at 15 years of age, and had hyperopia of 0.25 in the right eye. Whereas, now, $\frac{20}{20}$ in that eye, under mydriasis, with—2.75^{s},—0.25^{c}, Ax. 60°, and a perfectly normal fundus. The left eye had a high degree of myopic astigmatism at the time of the first examination and has since become divergent.

Dr. H. F. Hansell described *A Case of Atypical Retinitis Pigmentosa in a Child of 10.*—The pathologic changes were gradual absorption of areas of the retina and choroid at varying distances from the papilla, and an incipient atrophy of both optic nerves. He believed that the case was in the early stages of the disease recently described by Fuchs, namely, atrophia gyrata choroida et retinæ, the characteristic features of which are gradual disappearance of normal retina and choroid in patches arranged in concentric circles with the papilla as the center, and connected by islands of normal structures, and associated with advancing atrophy of the optic nerves.

Dr. Chas. A. Oliver gave a brief report and exhibited sketches of *A Case of Fibroma of the Eyelid* (painful subcutaneous tubercle of Wood).

HOWARD F. HANSELL, *Clerk of Section.*

SCHWARTZ reports two cases of bilateral resection of the sympathetic nerve in the neck, in which he obtained a distinct amelioration of symptoms.

SOCIETY OF OPHTHALMOLOGISTS AND OTOLOGISTS OF WASHINGTON, D. C.

The président, Dr. S. M. Burnett, in the chair.

At a meeting of the Society of Ophthalmologists and Otologists of Washington, D. C., Jan. 20, 1899, Dr. Muncaster exhibited a patient, three years of age, suffering with *Parenchymatous Keratitis*, and read a paper on the subject.

Dr. Richardson opened the discussion by showing some microscopical slides which illustrated this disease.

Dr. Belt said that, we rarely see this form of keratitis in a patient so young as the one presented by Dr. Muncaster. He found that many cases would recur after apparent cure, but ultimately the prognosis was good on anti-syphilitic treatment.

Dr. Newell spoke of a case he treated with powdered extract of supra-renal capsule, with satisfactory results.

Dr. Burnett stated that he had used extract of supra-renal capsule in strabismus operation to lessen the hemorrhage, but had never used it for keratitis. He had noticed in this form of keratitis the skin, instead of being coarse, was as fine as satin, especially in the Negro race. The Germans and French do not agree with Hutchinson, that all cases are due to inherited syphilis. A German physician had investigated a great number of cases in which he found no syphilitic history in the family. He asked, may it not be due to mal-nutrition and not to syphilis?

Dr. Dye said that, in regard to treatment in the case of a child without notched teeth but with syphilitic parents, he had dusted calomel in the eye and used mercury and potassium iodide internally until forced to discontinue the calomel from the child fighting against it. The patient was cured, however, and he questioned whether the local treatment was one of much value.

Dr. Belt expressed the belief that it was now the general opinion that the peg-shaped teeth were more significent of inherited syphilis that the notched teeth. The bleached or satin-like complexion which he had noticed among negroes who had acquired syphilis, he thought was an additional evidence of the syphilitic character of the disease.

Dr. Belt then showed a case of *injury to the eyeball, caused by the ex-*

plosion of a shell or cartridge. The accident occurred several months previous, but there is still considerable ciliary congestion and loss of vision, with a yellowish white-looking nodule just back of and below the lens.

Dr. Wilmer said that he thought it might be a case of suppurative choroiditis or sarcoma from traumatism.

Dr. Suter agreed that it might be a traumatic sarcoma.

Dr. Burnett expressed the belief that, from the length of time since the injury, it was not a case of suppurative choroiditis or sarcoma, but that the patient had had a cyclitis and that the yellowish nodule was lymph and that the retina had become detached. The eye, he said, should be removed.

Dr. French and Dr. Wilmer also thought that immediate enucleation was the proper course of treatment.

A paper on *Astigmatism in the Negro Race* was read by Dr. Fox.

In the discussion of this paper Dr. Belt said that, in an examination of 420 white school children made by him a few years ago, he found that 25 per cent. had astigmatism, while in the same number of colored children he found only 10 per cent. with astigmatism. In the dispensary work of the Episcopal Eye, Ear and Throat Hospital for the years '97-'98, 7 per cent. of the white patients were treated for astigmatism, while of the colored patients only 3.8 per cent. were treated for the same trouble.

Dr. Burnett thought that the statistics given by Drs. Fox and Belt showed that astigmatism had an important bearing on the development of the races. He found that myopia increased with the degrees of civilization. Some years ago he had made an extensive examination in regard to the color sense in the races; he found that color-blindness was less than half as prevalent among the negro as among the white. The normal acuteness of vision is higher among the lower races, being four times as acute among some Africans as in our race. In the hospitals about half as many negroes apply for defective sight as white, even when we include the mulattoes.

One investigator asserted that he could judge the character of the skull by the kind of hieroglyphics the individual made; certain forms of astigmatism being the result of certain forms of skulls. The kind of hieroglyphics varied with the kind of astigmatism. We find that myopia is becoming more prevalent in the negroes as they advance in education.

Dr. Muncaster said he had found in his dispensary that hypermetropic astigmatism was the most common.

Dr. Belt made a brief report of a *Case of Pulsating Exophthalmus* *from Aneurism of the Cavernous Sinus* which was improving, and then exhibited to the society a patient upon whom *sponge-grafting in the orbit for support of artificial eye* had been done by him about five weeks previously. The result was very satisfactory.

In discussing this case Dr. Suter expressed the belief that the motion did not appear to be quite as good as in the case of a Mule's operation he had seen, but that in the latter case there was great sensitiveness of the orbit. The patient would not allow the parts to be touched.

E. Oliver Belt, *Sec'y.*

THE MIDLAND OPHTHALMOLOGICAL SOCIETY.

Kansas City, Mo., Feb. 13, 1899.

Dr. Geo. E. Bellows read a paper dealing with the recent *Investigations in Regard to the Ocular Muscles, Tenon's Capsule and the Check Ligaments.* He reviewed briefly the anatomy of those structures, and also the individual and combined actions of the muscles.

Considerable attention was given to the check ligaments, which pass from each muscular sheath to the orbital wall, and to their effect on the movements of the eye.

These ligaments have only recently been appreciated in their bearing upon ocular movements, and they must be taken into consideration practically in a fair proportion of operations for strabismus.

The chief credit for our present knowledge of their meaning and importance belongs to Motais and Maddox.

Dr. Tiffany has had very good results with partial tenotomies in cases of insufficiencies of the ocular muscles.

Dr. Tyree: These investigations of Dr. Bellows are in the right direction, as the question involved in the treatment of defects of the ocular muscles is most important.

The salutary effect of prisms and tenotomies is yet in question.

Dr. Sherer: The terms intorsion and extorsion, as applied to the rotation inward and outward of the vertical meridian of the bulb, would appear to be desirable and acceptable additions to our nomenclature. The function of the check ligaments would seem to be almost as important as the tendons which they check.

Dr. Grove thinks that the point of attachment of the ocular muscles might be where the defect would be found in many cases. The attachment of the other muscles of the body are not always where they should be, and he does not see why the ocular muscles should not occasionally be defective in that respect.

Dr. F. G. Murphy wished to know the success the oculists present have had in using prisms or partial tenotomies with insufficiencies of the external recti. His experience in tenotomies and prisms with insufficiencies of the external recti, have been much more satisfactory than with the external recti.

Dr. Tiffany reported a case of *Bilateral Congenital Irideremia* in a girl twelve years old. The vision was 20/200 in each eye; + 2.50 sphr. lenses brought the vision to 20/80. She had little power of accommodation, and vision was not affected by a mydriatic. Irregular astigmatism, with little power of accommodation, Dr. Tiffany assigned as the cause for her vision being no better. The ciliary bodies could be plainly seen. Dr. Tiffany also reported two cases of *Chancre of the Conjunctiva.*

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held March 14, 1899, with the President, Dr. Ware, in the chair.

Dr. William H. Wilder presented a case of *Multiocular Cyst in Fornix of Conjunctiva* in a boy, 11 years of age, who had recently developed a multiocular cyst in the fornix of the left lower conjunctiva. This cyst contained serous contents, with degenerated epithelial and lymph cells. On everting the lid the little tumor rolled out like a sausage-shaped mass.

Dr. Wilder also presented a case of *Detachment of the Retina* in both eyes. That of the right was of the complete umbrella-shaped variety; vision of that eye was reduced to about perception of light. The detachment of the left eye was partial and involved the lower hemisphere. In both eyes evidences of degenerative changes of the vitreous could be seen.

Dr. J. E. Colburn, some years ago, while everting the lid to instill atropine, noticed a tumor which presented very much the appearance described by Dr. Wilder. On opening the sac, a piece of pencil graphite, a quarter of an inch in length, was discovered and removed.

Dr. Henry Gradle has seen three instances of cysts of the bulbar conjunctiva, none of them traumatic. They were about the size of small shot. One of them had existed for months without annoyance or irritation, when it suddenly became inflamed, and its contents, previously clear, turned purulent. A second one may have been unnoticed for some time, but when the patient called it was surrounded by a zone of injection, like a phlyctenule on the bulbar conjunctiva, and was irritating. Yet its contents were perfectly transparent. The third case, a young girl, had had a clear pale cyst for an unknown length of time. All these cysts were extirpated and prompt healing obtained.

Dr. W. F. Coleman saw a similar case about ten days ago. The cyst was punctured and it contained serous fluid. It was situated more to the temporal side and just at the reflex fold, the cyst seeming to be continuous with the hypertrophied portion of what appeared to be the lachrymal gland.

Dr. Casey A. Wood: This case is a good illustration of Nordenson's theory of the causation of detachment of the retina, which, according to his investigations, depends not so much upon stretching of the globe, as in myopia, or to direct violence, as in injury to the eyeball, but rather to changes that occur in the vitreous itself. First, we have choroidal disease, mostly chronic in character, followed by the formation of connective tissue, or strands resembling connective tissue, in the vitreous, and from the contraction of these, with shrinking of the vitreous in part or as a whole, the retina is pulled away from the choroid behind it. In this case, where none of the ordinary causes of detachment are present, we have a good illustration in their proper sequence of the factors claimed by Nordenson to be present in all cases of the non-traumatic forms of retinal detachment.

Dr. Wilder agreed with Dr. Wood that the cause of this detachment of the retina is the shrinkage of the vitreous, the contraction of cicatricial bands, and the formation of new connective tissue. The case is interesting in that it illustrates so well the theory of Nordenson.

Dr. Casey A. Wood reported a case of *Orbital Lipoma*.

H. A. F., aged five months, a robust child of perfectly healthy parents, was brought to Dr. Wood on the second of last November with a yellowish-white growth, evidently subconjunctival, presenting at the outer canthus. The mother believed it to have appeared shortly after birth, and thought that it had grown slowly and uniformly since that time. When the child cries, the tumor becomes more prominent and protrudes between the lids, while its covering appears redder than the corresponding area on the left side. It is not tender to the touch, is freely movable, and the projecting portion may be pushed back into the orbit. With the exception of this growth, the eyeball is entirely normal, and its excursions are not limited in any direction. On November 7th the growth was removed under chloroform. It proved to be an incompletely encapsulated tumor lying on the anterior surface of the left external rectus muscle, and following the course of that muscle backward into the orbit. It seemed to be attached to the sheath of the latter, and to Tenon's capsule in front, so that it was necessary to remove a few fibers of the muscle itself. In its fresh condition the small tumor formed, when spread out, an irregular oval about 4 cm. long by 2 cm. at its widest part. Dr. Brougham, pathologist of the Passavant Memorial Hospital, kindly examined it and made several microscopic slides for me, one of which is shown this evening. His report is as follows:

"Tumor removed on the 7th of November, 1898, measures 4 cm. by 2 cm. Its upper surface is irregular, and the under side smooth. Yellowish-white in color and evidently mostly composed of fatty tissue. Microscopically it is a pure lipoma, to the under surface of which are attached striped muscle fibers."

Discussion.—Dr. William H. Wilder thinks these are sometimes associated with dermoids. Some three years ago he had a case in which a lipoma sprang from the orbital tissue apparently, about the size of a large hazelnut, and associated with it in the same eye was a dermoid tumor affecting the limbus of the conjunctiva. They were both easily removed without any signs of recurrence.

Dr. Henry Gradle read a paper entitled *Diagnostic Significance of One-Sided Amblyopia.* (See OPHTHALMIC RECORD, April, 1899, page 181.)

Casey A. Wood presented extracts from his paper on *The Ocular Evidences of Hysteria*, published in the *American Journal of Medical Sciences*, Jan., 1899, page 42.

Dr. J. E. Colburn reported the following cases:

May, 1891. Mrs. H., aged 32 years; general health good; has been subject to migraine from childhood. At 18 years of age she first noticed that the headaches were ushered in by "blind spells," lasting from one to ten minutes, followed by severe pain in the temples and nausea, lasting from two to ten hours. The attacks occurred once in two to eight weeks. She had frontal and occipital headache nearly every day, sometimes only a feeling of discomfort. Two months ago an attack of migraine was followed by a period of total blindness lasting three days. The eyes were rolled far up into the head, and the patient refused to move about. The trouble passed off without after effects. Three days previous to Dr. Colburn's visit, the patient was seized with the usual migraine symptoms, but the attack was unusually severe. At the time of his visit the patient had been totally blind for forty-eight hours. He found her reclining on a lounge, complaining of no discomfort except that she could not open her eyes wide nor distinguish light from dark. The iris, which slowly responded to light, was slightly dilated; the cornea and conjunctiva somewhat dry; eye slightly divergent. The approach of objects to the eye — a knife, a lamp, a hot wire, etc., produced no reaction. The only reaction was that of a red glow, whether in the light or dark.

Feeling that this was a case of hysteria, he impressed the patient with the fact of the importance of a remedy he should use — eserine — described minutely the effects as she would be able to feel them, and added the fact that she would be able to read print held close to the eyes, and that by the second day the vision would return to the normal condition. The suggestion resulted as had been predicted. Meanwhile, a calomel purge was advised, followed by strychnia sulphate and iron. As soon as she had recovered her vision, the correction of her hyperopic astigmatism gradually relieved the headaches, and migraine has not returned.

Case II. September, 1894. Miss R., aged 17, a nervous, impressionable girl, working overhard in school, and subject to headaches. She complained of severe, one-sided headache following a general clouding of vision, and a display of flashing light before both eyes. Hot water compresses were applied to relieve the pain during the night, and in the morning the patient awoke blind with the eyes rolled far up. On the fourth day the patient was brought to the office with all the appearances of a newly-blind person. She submitted to the application of the fixation forceps, so that the eye could be dragged down and the cornea and the fundus examined. Eserine and suggestion were used with success. The patient was carefully refracted and the headaches cured.

Case III. Matthew L., aged 15 years, became seemingly blind and partially deaf the day following a punishment with a strap at school, though the night before and immediately following the punishment he was able to land two or three stones on the teacher's person and to hear the sympathizing of his mother.

The symptoms were those of total blindness. An examination revealed no changes in the retina. On making the suggestion he was able to see to the extreme right of the field, and in about two minutes the field gradually became normal. The trouble did not return.

Great care must be taken not to confuse hysterical amblyopia with migraine and uricacidemia amblyopia. The scotoma preceding the headache may, in migraine and uricacidemia, be followed by a more or less lowered vision lasting several minutes or several days, and may be constantly in the original position, or change when it does not occupy the whole field to various positions in the field. It will vary in intensity during the day, seemingly less in the afternoons, and usually does not recur following the first good night's rest after the head symptoms have disappeared.

Undoubtedly the errors of refraction and the discomfort which they produce have to do with determining the manifestation of the hysteria in the eyes.

Discussion.—Dr. Harold N. Moyer liked the term which Dr. Gradle used of psychical amblyopia, for it is by no means certain that these cases are all hysterical, but all those that are hysterical are psychical, a distinction that may be wisely borne in mind. Where the stigmata of hysteria are present, the diagnosis of these cases is not difficult. But it is well to remember that in some of them organic disease is associated with the psychical amblyopia, and sometimes with other stigmata of hysteria. This is often the source of error, the two conditions being simply associated.

A case presenting stigmata of hysteria is not difficult of recognition. He recalled a case which he saw with Dr. Wilder. The amblyopia was sudden and quite complete in one eye; marked in the other; total deafness to voice upon the same side as the amblyopia, with absolutely normal ear-drums, naso-pharynx, and eustachian tubes. Singularly enough in that case the highest tones were not perceived in the deaf ear, while upon the opposite side the lowest tones up to 128 were not heard. An area of anesthesia extended from the margin of the hair and angle of the jaw to a transverse line drawn around the body at the level of the umbilicus. The left arm was included. There was absolute paralysis of the left arm of three months' duration without electrical alteration. In such a case as this there is not the slightest difficulty in making a diagnosis. The association of the symptoms, the absence of organic trouble, is self-evident in a cursory examination of such a patient.

In contrast to this one a young girl, 11 years of age, had progressive failure of vision for a year and a half. Vision in the left eye was reduced to the perception of light; vision in the right eye was equal to counting fingers at four or five feet. The left, however, on closer examination, was found to present a normally sensitive portion of the retina corresponding to a slight oval area in the temporal side of the retina, amounting to about ten degrees in the visual field. With the left eye she could see nothing, only a perception of light; with the right eye she could count fingers at three or four feet; she could not see the largest type on the Snellen test card within a foot or two, or figures drawn upon cardboard as, for instance, a triangle made with matches could be seen, but not one of the same size drawn with a pencil. She could distinguish coins, as a penny from a quarter, and a quarter from half a dollar. She readily picked out a ten cent piece from several coins lying on my hand. These Dr. Moyer termed confusion symptoms. This girl presented absolutely no other stigmata of hysteria. There was no anesthesia, nothing in the history of the case, excepting a bad heredity; she had a neurotic mother, that would suggest hysteria other than the disturbance of vision. Vision being reduced to the perception of fingers at the distance mentioned, the room was darkened, objects placed in a certain place, and this child could walk about among them with facility; but if the better eye was bandaged, she stumbled over everything in the room. The question arises, was there a difference between the two eyes? The character of the blindness would lead us to believe that there was a difference in degree. So far as could be determined, she could not see except with a narrow portion of the retina in the left eye. The loss of vision, apparent with the test types, was not shown when the room was darkened.

Dr. William H. Wilder hoped that Dr. Moyer would bring out one interesting test he made in his case of hysterical amblyopia. This was the Snellen test with red and green glasses. When the Snellen spectacles were placed on this patient with, for example, the green glass before the left eye, she not only saw all of the red letters, but also all of the green ones, thus demonstrating that she had much more vision than was supposed in the amblyopic eye. This at once raised the question of simulation.

As far as confusion tests are concerned, most of us have seen cases where patients would carefully avoid objects when placed in front of them. He recalled a young girl whose vision was reduced almost to the perception of light, or at least to counting fingers at a distance of a few feet before each eye; yet if anything was placed in front of her while she was walking along, she would carefully avoid it, or step over it without stumbling. She subsequently recovered entirely.

Dr. Lyman Ware, in determining hysterical amblyopia from other forms, relied upon inversion of the field of vision for colors.

Dr. W. F. Coleman recalled the case of a farmer, about forty-five years of age, in excellent general health, who had complained of some rather obscure cerebral symptoms. There was a doubt as to whether the man had a brain tumor. No changes were found in the fundus. He had some anesthesia on one side. He had a reversal of the color-fields; also a contracted field of vision. The central vision was 20/30, but his own sensation of loss of vision was out of proportion to his actual vision. He eventually recovered normal vision.

Dr. C. P. Pinckard: The tests referred to by Dr. Moyer as "confusion tests" are comparatively common. In a boy about twelve years old whose vision for letters was reduced to less than 1/10, yet for certain small objects, such as pictures, his vision was practically normal.

Dr. A. E. Bulson, Jr., of Fort Wayne, Ind.: Care must be exercised to distinguish hysteria, a functional disturbance, from malingering, in which the impairment of vision is feigned, the one frequently simulating the other in the character of manifestations, and mentioned the case of sudden blindness occurring in a man applying for increase of pension. His eyes presented a normal appearance. All well known methods of detecting simulation were tried without avail. Prior to a second examination the applicant was discovered playing billiards.

A second case is that of a man who presented himself, complaining of pain and distress in the eye, and a claim of total blindness from date of removal of piece of steel from eye two years previous. On examination the eye appeared perfectly normal. All symptoms subsided and sight returned shortly after taking a few aromatic lozenges for perfuming the breath.

IMPERFECT EYES.—According to the examination of 12,000 eyes in children, 6 to 7 years of age, by Steiger, during a period of 3 years, 13.1 per cent were imperfect. He attributes this, in one-half of the cases, to existing astigmatism.—*Corresp. f. schw. Aerte.*

A TRACHOMA SCHOOL.—A few months ago there was opened by the city authorities in Milan u school for children afflicted with granular conjunctivitis. The school is an annex of the Ophthalmic Institute, and comprises two rooms, each of which can accommodate fifty pupils. At the present time the total number of children in the school is sixty. When lessons are over the children go to the institute to be treated, and only after treatment are they allowed to go home.—*N. Y. Medical Record.*

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. H. Bert Ellis has been elected Secretary of the California State Medical Society.

Dr. L. Loran Palmer has been appointed Eye and Ear Surgeon to the Toronto Orthopedic Hospital.

Dr. Willis O. Nance, Chicago, has accepted the professorship of ophthalmology in the Chicago Clinical School.

Dr. George C. Harlan has been elected president, and Dr. Charles A. Oliver secretary, of the surgical staff of Wills Eye Hospital.

Dr. Thomas A. Woodruff has removed his office to 103 E. Adams St., Chicago, Ill., where he will be associated in practice with Dr. Casey A. Wood.

James B. Gibson, M.D., formerly senior surgeon of the Manhattan Eye and Ear Hospital of New York, died in Colorado Springs, Colo., April 10th.

We record the death of J. Samelsohn, of Cologne, aged 48 years, a prominent and popular ophthalmologist and author of numerous works on his specialty.

At the last meeting of the Omaha Medical Society, held April 11th, Dr. Harold Gifford was elected as First Vice-President, and Dr. D. C. Bryant Chairman of the Board of Censors.

Dr. D. C. Bryant is Chairman of the Section of Ophthalmology and Otology of the Nebraska State Medical Society, which holds its next annual meeting in Lincoln, May 9, 10 and 11.

THE Missouri State Medical Society meets May 16, 17 and 18, in Sedalia, Mo.

DR. J. H. THOMPSON, of Kansas City, is Chairman of the Section of Ophthalmology and Otology. Associated with him in the Section work are W. P. Camp, of Springfield, and James Moores Ball, of St. Louis.

THE Midland Ophthalmological Society of Kansas City meets on the third Monday of each month at the Coates House. The society is very prosperous, it is said.

DR. HERMANN SNELLEN, the famous Professor of Ophthalmology at the University of Utrecht, will resign his chair in the University at the end of the present semester. Herman Snellen, his son, will succeed him.

THE BRAIN OF HELMHOLTZ.—Dr. Hausemann, of Berlin, has made an examination of the brain of the late Professor Helmholtz. He reports that it weighed fourteen hundred and forty grams, which is less than one hundred grams above the average weight of a man's brain; that the frontal convolutions were very numerous, and [of an unusual degree of development.—*New York Med. Record.*

THE Helmholtz Medal of the *Academy of Sciences*, of Berlin, has been awarded to Prof. Rudolf Virchow. The medal, instituted in 1892, with a capital of $12,000, in honor of the seventieth anniversary of the birth of Helmholtz, weighs 620 grammes, and is awarded every two years. The recipients of it have been Helmholtz himself, du Bois-Reymond, Weierstrass, Sir William Thomson, and Professor Virchow.—*Philadelphia Medical Journal.*

A "CURATORIUM" for eye troubles exists in St. Petersburg, which sends commissioners through the country districts for the purpose of giving free treatment and advice to those among the peasantry who are suffering from affections of the eyes. The report for the year 1898 states that 33 of these ophthalmological expeditions were sent out during the year to various parts of the empire. On these commissions were 107 oculists and 17 students, who treated 53,828 cases of eye diseases and performed 16,029 operations.

Hirschberg, at a recent meeting of the *Berliner Medicinische Gesellschaft*, reported finding five glass-blowers, out of thirty employed in a factory, suffering from cataract. Other authors have remarked the frequency, and the early age (before forty years), that glass-blowers develop cataract. This has led us to the use of the term Hitzstaar (heat cataract). The statements that cataracts are more common in hot climates than in cold is confirmed in India, where cataracts are often seen in persons of middle age, whereas in colder climates the average age for senile cataract to develop is sixty-two.

At a recent meeting of the Kansas City Ophthalmological Society, Dr. J. W. Sherer read a paper on skiascopy. He recommended using the small plane mirror in a perfectly darkened room, the operator to be quite close to the patient. Dr. F. G. Murphy then exhibited a new model of a circular skiascope, in which the surgeon is able to keep any lens directly in front of either eye of the patient with perfect ease, no matter how much the patient may move about. The instrument is inexpensive, and contains thirty-five lenses. The light can be placed on either side of the patient. Either eye can be examined without moving the patient, by slightly shifting the instrument.

The Use of Ichthyol in Diseases of the Eye.—Eberson, M., (*Klinisch-therapeutische Wochenschrift*, 1898. No. 18, S. 669; *American Journal of the Medical Sciences*, December, 1898,) makes use of a 30 to 50 per cent aqueous solution to which a small percentage of glycerin is added, and of a 5 per cent ointment. Fifteen instances of its use are reported. The conclusions are: (1) That it is a sure remedy for the cure of trachoma in that the course of the disease is shortened and the surfaces become smooth; (2) that this method is especially to be recommended for children; (3) that it quickly cures catarrhal conjunctivitis with or without corneal complications; (4) that it is a powerful remedy for clearing the corneal scars.

The Paris correspondent of the *Standard* says that a Dr. Edwards, a mystical healer, is turning the heads of the Parisians. His lodgings, at 6 Rue Cadet, are crowded with blind, deaf and dumb persons, and with consumptives and others who have been pronounced incurable. Dr. Edwards encourages them to hope for renewed strength, and places his fingers where pain is felt, simulating that he is picking it out and casting it on the floor. Loie Fuller, the American dancer, is one of his patients. She says she hopes that Dr. Edwards will save her eyesight. The healer is about sixty years old, and has white hair. He was born in Rome, and practiced medicine in Australia until, as he says, he discovered accidentally his power to heal all diseases by the method he now pursues.

OPACITY OF THE CORNEA.—Berry, G. A., Edinburgh, (*Edinburgh Medical Journal*, April, 1898; *American Journal of the Medical Sciences*, December, 1898,), recommends for the treatment of opacities of the cornea, due to recent exudation, massage of the cornea. This is best done through the lid. The lid is rubbed quickly and with gradually increasing force over the cornea for half a minute or more at a time, once or twice daily. To do this effectually the rubbing must give rise to a moderate degree of surrouding hyperemia. The massage may be combined with the use of iodine ointment, or a good, and not too strong, stimulating effect may be secured by the daily use of the following prescription:

℞. Olei terebinth ---------------------------ʒ j.
Olei amygd ------------------------------ʒ ij.

WE QUOTE from the *Southern California Journal:*

Rogmann, as quoted in the Journal of the American Medical Association, concludes a review of the various local anesthetics used in ophthalmology, by expressing his preference for tropacocain (Giesel and Liebermann, 1891). The anesthesia is more complete than with others, more rapid in its appearance and more permanent than with cocain. It effects even inflamed tissues. Mydriasis is rare and slight. It has antiseptic properties, and the solution keeps a long while, and is much less toxic than cocain. He uses a 3 per cent solution with marine salt, 6 per 1000, which deprives it of all irritating properties. The anesthesia is so prompt that for the extraction of a foreign body the cornea can be scratched almost immediately after the instillation of a single drop. Two drops in the conjunctiva opposite each muscle are sufficient for strabismus operation. In some cases the consecutive painful reaction seems more pronounced than after other anesthesia.

THE sixty-seventh annual meeting of the *British Medical Association* will be held in Portsmouth, England, August 1st, 2d, 3d and 4th, 1899. The Section in Ophthalmology will be presided by Simeon Snell, with

L. Maybury and Treacher Collins as vice-presidents, and Vernon Ford and Arnold Lawson as secretaries.

Papers to be presented must reach one of the secretaries not later than June 24th. Portsmouth being a large military center and naval port, it is hoped that a considerable number of naval and military medical officers will attend the meeting of the Association, and the following subject, therefore, has been chosen for discussion. "The Visual Tests Employed in the Navy, Army, and Mercantile Marine, and their Efficiency." It is also proposed to hold a second discussion upon, "The Pathological Significance of Sympathetic Irritation and its Connection, if any, with Sympathetic Ophthalmitis."

Papers at the sectional meeting must not occupy more than fifteen minutes in reading, and no subsequent speech must exceed ten minutes.

SLOWNESS OF PERCEPTION OF SIGNALS.—The *Philadelphia Medical Journal* (March 25th) contains an item in regard to the examination of railway employes which suggests a very possible danger that has been hitherto largely overlooked. Dr. Valentine, of the Long Island Railroad, finds that while color-blindness, heretofore regarded as the chief element of peril, is comparatively rare, it is not uncommon to meet with abnormal slowness of sight or limited range of vision. Most of those with these defects are those of middle life or beyond. Slowness of perception of danger signals would naturally be as serious a cause of risk as partial color-blindness, and it is a little remarkable that more has not been made of it than is the case. The difficulty being throughout a psychic one, as some have thought color-blindness might be in some cases, it is not hard to conceive its occurrence in the early stages of general decadence. At the same time it is also conceivable that it may be compensated for by special attention, and that the tests, not reproducing all the actual conditions, might to some extent mislead the examiner. The subject is one that ought not to be, and we presume is not, neglected by railroad medical examiners generally.—*Journal of Amer. Med. Asso.*

DR. JACOB C. DENISE, one of the best known physicians of Omaha, died in that city January 20th, as the result of la grippe. He was seventy years of age and graduated at the Jefferson Medical College in 1855, and commenced practice in Dayton, Ohio. He was a surgeon in the War of the Rebellion. He located in Omaha in 1867, and since then has always been closely associated with medical affairs in Omaha, and in the

State of Nebraska. He held many medical positions of honor and trust, and was one of the founders of the Omaha Medical College, in which institution he occupied the chair of ophthalmology and otology. As an evidence of the respect in which he was held by his colleagues, we print the resolutions adopted by the faculty of the Omaha Medical College at a meeting held January 21, 1899:

Whereas, Our colleague, Dr. Jacob C. Denise, has by death been removed from our faculty;

Whereas, His noble and strictly ethical life was, during his sojourn with us, a grand example to all his professional associates, and one that we, his colleagues, do commend to the students of our college as a high standard in all matters relating to true manhood; therefore,

Resolved, That we, in company with the students of the Omaha Medical College, attend his funeral in a body; that the college exercises, out of respect to the memory of the deceased, be dispensed with on the afternoon of the day of his funeral, and that the lecture room in which he labored so successfully be appropriately draped in mourning for a period of thirty days.

The following incomplete list of recently issued works on the eye are from the pens of American authors and editors, and might with much profit find a place in every ophthalmologist's library: "An Essay on the Nature and the Consequences of Refraction," by F. C. Donders. Edited by Dr. Charles A. Oliver, Philadelphia. P. Blakiston's Son & Co. 1899. 81 pp. $1.25.

"Retinoscopy (or Shadow Test) in the Determination of Refraction at one Meter Distance, with the Plane Mirror." By James Thorington. Third Edition. P. Blakiston's Son & Co., Philadelphia. 1899. 86pp. $1.00.

"A Practical Handbook on the Muscular Anomalies of the Eye." By Howard F. Hansell and Wendell Reber. Twenty-eight illustrations and one plate. P. Blakiston's Son & Co. 1899. 182 pages with index. $1.50.

"Ocular Therapeutics for Physicians and Students." By F. W. Max Ohlemann (Minden, Germany). Translated and edited by Charles A. Oliver. P. Blakiston's Son & Co. 1899. 274pp. with index. $1.75.

If the ophthalmologist decides to confine his study of general diseases to one publication, there can hardly be found a more satisfactory compendium of progress in surgery and medicine than "Sajon's Annual and Analytical Cyclopædia of Practical Medicine. This appears in illustrated monthly volumes (of about 600 pages) and is published by the F. A. Davis Co., Philadelphia, New York and Chicago, forming a worthy successor to their well known Annual. The subjects are reviewed in alphabetical order and will be continued through the year.

MEDICAL GLEANINGS FROM ROMAN EGYPT.—The *Lancet* for February 25th says that it is probable that no archæological literary discovery of the expiring century will in future be so celebrated as the rescue from the sands of the Egyptian Fayoum of more than ten thousand complete and fragmentary papyri by the explorers acting under the auspices of the "Græco-Roman Branch of the Egyptian Exploration Fund," a society which at its commencement owed much to the late Sir Erasmus Wilson. A selection from some fourteen hundred documents, the greater part of which are at Oxford, and the minority at the Ghizeh Museum, has been made by Messrs. Grenfell and Hunt, who have carefully edited about a hundred and fifty of them, and published them with a commentary in a volume entitled *The Oxyrhynchus Papyri:* Part I, with eight facsimile plates. First in importance is the now famous portion of a "Logia," or collection of "Sayings of our Lord." There are also pieces by Sappho, Thucydides, Plato, and other classical writers. The first papyrus of medical interest is No. 39, which is from the military archives of Oxyrhynchus, and is the certificate for the release from army service of one Tryphon because of defective eyesight. It reads thus: "Copy of release, dated and signed in the twelfth year of Tiberius Claudius Cæsar. Release from service was granted by G. Vergilius Capito, præfect of Upper and Lower Egypt, to Tryphon, son of Dionysius, weaver, suffering from cataract and shortness of sight of the metropolis of oxyrhynchus. Examination was made at Alexandria." Another papyrus gives an account of a lawsuit relative to the identity and the custody of an infant who had been placed with a baby farmer. Papyrus No. 51 is the report of a medical officer upon a case of suicide, and is dated A. D. 173. A similar document is to be found in the large collection of Greek papyri in the Berlin Museum. The present one is as follows: "To Claudianus, strategus, from Dionysius, son of Apollodorus, son of Dionysius of Oxyrhynchus, public physician. I was to-day instructed by you through Heraclides, your assistant, to inspect the body of a man who had been found hanged, named Hierax, and to report to you my opinion upon it. I therefore inspected the body in the presence of Heraclides at the house of Epagathus in the Broad Street quarter, and found it hanged by a noose, which fact I accordingly report."—*New York Medical Journal.*

THE DEGREE OF "DOCTOR OF OPHTHALMOLOGY."—We have before us the announcements of two colleges located in Chicago, which confer the above degree. One seems to encourage instruction by correspondence. Its course consists of a series of lectures, which if pursued with diligence and an earnest desire to learn the science of optics, will enable one to become a thorough and practical optician. They further guarantee to teach as much as any other institution, and more than a great many, no matter where, when or what their method. The course is intended to cover a period of eight weeks, but we are informed that if a student applies himself he may thereby lessen the time. An outline of the course is given, which includes eight lectures. The first deals with optics and their practical application, and the last with the ophthalmoscope, retinoscope, asthenopia, orthophoria, strabismus, prisms, drugs, diseases, and ophthalmoscopic diagnosis.

Perhaps the most important rubric is the following:

Issuing DIPLOMAS and
Conferring of Degrees
at the Conclusion of the Term.

The diplomas, we are informed, are 17 x 22 (it is not stated whether feet or inches), and present a handsome appearance. "Going," it is said, "as they do from this great city, they carry prestige with them and always leave a good impression." The fees for this course are placed at the nominal sum of $25. It is not definitely stated whether postage is, or is not, included. It is stated in the announcement that this is a regularly incorporated institution, hence the degrees are legal.

Another school is organized on a somewhat different plan. Its announcement is more ornate, but the range of information is substantially the same, though attendance upon the school is apparently required. The curriculum is divided into six days, thus following the Scriptural injunction, "Six days shalt thou labour and do all thy work." A page in the announcement is devoted to what is taught on each day. To avoid confusion they are printed in different colored inks: thus the first day is in a striking red, the second is appropriately set forth in green, the third in a pale brown, the fourth appears in a refulgent red; the fifth, which includes the pathology of the eye, in a deep purple; the sixth, in which there is a recapitulation of the entire curriculum, in green. At the bottom of the page is a beautiful scroll containing the words "finis."

The closing page of this announcement is printed in a somber black, and contains a word about the degree. Nothing is said as to the size of the diploma, but we are told that the word "doctor" in its original sense meant teacher. There is also a statement that this is a regularly incorporated institution, and therefore its degrees are legal. It is this latter clause that gives the announcement a sting. It is true that these colleges are incorporated, and that the great State of Illinois confers through these corporations the degree of "Doctor of Ophthalmology." The latter is conveniently and briefly written by its fortunate possessor, "Oph. D." —*Medicine.*

A contributor to the *Optical Journal Supplement* contributes an article for that journal in which he enumerates some of his ideas concerning the performance of refraction work by opticians. They are sufficiently explicit, pointed and comprehensive to be of interest. We therefore append them:

HINTS AND MAXIMS FOR OPTICIANS.

1. Remember that it is the optician's business to test eyes; therefore do not lose too much valuable time trying to diagnose error in refractions objectively.
2. Use all the best subjective methods at your command, but begin and finish with the test lenses.
3. Send to the oculist all cases which cannot successfully be tested without mydriatics, the ophthalmoscope, retinoscope, or ophthalmometer; and in the present light of practical subjective optometry they should be few indeed.
4. The pin-hole test should be good enough for the optician; anything further is outside of his province, and it is good policy to avoid it.
5. Do not expect persons with eye diseases to be fitted with glasses, but refer them to proper medical practitioners.
6. Test all eyes for muscular insufficiencies, but do not order prisms until you are positive that the correcting non-prismatic glasses have failed to do their duty after having been used a reasonable time, supplemented with perfect rest of the eyes from near work if necessary.
7. Do not in ordering spectacles rely too much on rules, few or thousands; every case is peculiar.
8. Cultivate friendly relations with medical practitioners by sending to them patients recommended by you, with letters, and in most cases you will find them reciprocative.
9. When ordering compound lenses for your patrons, be sure and have them make a deposit, for which you give a receipt, stating that balance should be paid on delivery, etc.

10. In doubtful cases make your price so that you can afford to change the glasses, gratis if unsatisfactory.

11. Do not lose your temper when patrons return the next day or shortly after receiving the glasses, but good naturedly try to explain to them that it is necessary to give them a fair trial, which often takes some time.

12. Most people you will find to be more or less dissatisfied with the glasses if ever so correctly fitted. In the beginning do not let this discourage you.

13. Do not warrant a fit, but tell your patrons that you will try and do the best you know how, and in doubtful cases, if necessary, test them over again and furnish another set of lenses for the same price.

14. Cases with astigmatism. It is often good policy to test such eyes a number of times on different days before ordering the glasses.

15. Should you be in doubt about the strength of the glasses to order, in such cases it is good policy to tell your patrons that their case is largely experimental, and that the glasses would probably have to be changed several times at stated periods; in such cases do not fail to make your price accordingly.

16. Do not be too positive in your infallibility, for we are all liable to make mistakes; although glasses may be correctly fitted in theory, still we may find that practically something different is wanted.

17. You cannot make a uniform rate or scale of prices for glasses. Your inborn tact must tell you when and how, for it is not so much the glasses after all, but the amount of your responsible experience and practical knowledge which are some of the principal factors in setting the price.

18. Try to be as charitable as possible, do not set your prices too high for the poor, the rich are able to pay more, but make your prices as reasonable to rich and poor; overcharge nobody.

WE SUBMIT the program for the Ophthalmological Section of the *American Medical Association.* Addresses (by invitation) are:

"Advances in the Surgical Treatment of Strabismus." Dr. Edmond Landolt, of Paris.

"Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit." Dr. Chas. Stedman Bull, of New York City.

"The Rise of Ophthalmic Surgery in the United States of America." Dr. Charles A. Oliver, of Philadelphia.

Papers will be presented to the Section as follows:

1. "Aluminum Spheres as a Substitute for Glass Balls in Mules' Operation." D. C. Bryant, Omaha, Neb.

2. "Treatment of Trachoma by Cupric Electrolysis." George F. Keiper, Lafayette, Ind.

3. "Fractures of the Orbital Plate of the Frontal Bone, with Report of Cases." J. O. McReynolds, Dallas, Tex.

4. "On Seeing the Capillary Circulation in One's Own Retina." C. E. Norton, Lewiston, Me.

5. "Uncommon Expressions of Ethmoidal Sinus Disease and its Ocular and Orbital Symptoms." Robert Sattler, Cincinnati, Ohio.

6. "Subjectoscope or Some Subjective Visual Sensations." Hamilton Stillson, Seattle, Wash.

7. "Nutrition of the Crystalline Lens and its Relation to Cataract Formation." Lewis Stricker, Cincinnati, Ohio.

8. "Excessive Myopia: When Should We Operate and How?" Andrew Timberman, Columbus, Ohio.

9. "Quinin Blindness in a Young Child." H. Moulton, Fort Smith, Ark.

10. "Nasal Stenoses in Their Relation to Ocular Disturbances." Bryson Delavan, New York City.

11. "Eye Troubles Attributable to Nasopharyngeal and Aural Disturbances." Joseph A. White, Richmond, Va.

12. "Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye." J. H. Bryan, Washington, D. C.

13. "Cyst of the Iris Following Iridectomy for Cataract Extraction." S. C. Ayres, Cincinnati, O.

14. "Relation of Accessory Cavities to Ocular Affections." C. R. Holmes, Cincinnati, Ohio.

15. "Ocular Manifestations of Arteriosclerosis, with Report of Cases." Charles H. Beard, Chicago.

16. "Pathologic Influence of Antral Cystitis in Lachrymonasal and Ocular Lesions." S. Lewis Ziegler, Philadelphia, Pa.

17. "Analysis of Cases of So-Called Chronic Glaucoma, with Special Reference to the Visual Field." Geo. E. de Schweinitz, Philadelphia, Pa.

18. "Operative Treatment of Chronic Glaucoma." Alex. W. Stirling, Atlanta, Ga.

19. "Whether to Operate in Glaucoma Simplex: An Analysis of 16 Cases." Robert L. Randolph, Baltimore, Md.

20. "A Clinical and Pathologic Study of a Case of Hemorrhagic Glaucoma." Wm. Campbell Posey, Philadelphia, Pa.

21. "Significance of Certain Rare Forms of Ametropia." S. D. Risley, Philadelphia, Pa.

22. "Management of Cases of High Anisometropia." Edward Jackson, Denver, Colo.

23. "Astigmatism After Cataract Extraction." C. F. Clark, Columbus, Ohio.

24. "On Very High Astigmatism." T. B. Schneidemann, Philadelphia, Pa.

25. "Surgical Treatment of High Degrees of Myopia." H. V. Würdemann, Milwaukee, Wis.

26. "Experiences of Secondary Capsular Operations." J. M. Ray, Louisville, Ky.

27. "National Recognition of Eyestrain Reflexes." Geo. M. Gould and Helen Murphy, Philadelphia, Pa.

28. "On Variations of the Cylinder Axis (Torsion of the Globe) in Distant and Near Fixation." W. Franklin Coleman, Chicago.

29. "Radical Cure of Vernal Conjunctivitis." L. Webster Fox, Philadelphia, Pa.

30. "The Papillitis Accompanying Brain Tumor." John E. Weeks, New York City.

40. "Some Questions Arising During the Treatment of Migratory Ophthalmia." Adolf Alt, St. Louis, Mo.

41. "Some Clinical and Pathologic Notes on Migratory Ophthalmia." Harold Gifford, Omaha, Neb.

42. "The Question of Operation on the Injured Eye in Sympathetic Ophthalmia." Robert Sattler, Cincinnati, Ohio.

43. "Value of Cycloplegia in Optometric Examinations." C. M. Culver, Albany, N. Y.

44. "Why the Negro Does Not Suffer from Trachoma." W. M. Cowgill, Paducah, Ky.

45. "Demonstrations of Moist Specimens Showing Relations of Accessory Sinuses to Orbit." C. R. Holmes, Cincinnati, Ohio.

46. "Concerning Bacteriology of Acute Catarrhal Conjunctivitis." C. A. Veasey, Philadelphia, Pa.

47. "Report of a Case in Which Both Eyes Were Lost from Intraocular Hemorrhage After Cataract Extraction." Albert R. Baker, Cleveland, Ohio.

48. "Secretion and Exudation Considered as a Factor in Diseases of the Eye. John W. Wright, Columbus, Ohio.

49. "A Case of Convergent Strabismus Measuring Sixty-two Degrees (observed in the clinic of Dr. Edmond Landolt) and its Management." William B. Meany, Louisville, Ky.

50. "Mucocele of the Newborn." Clark W. Hawley, Chicago.

51. "The Phorometer or Maddox Rod; Which?" Alvin A. Hubbell, Buffalo, N. Y.

52. "A Few Thoughts Indicating a Causative Connection Between the Uric Acid Diathesis and Astigmatism Against the Rule." Louis J. Lautenbach, Philadelphia, Pa.

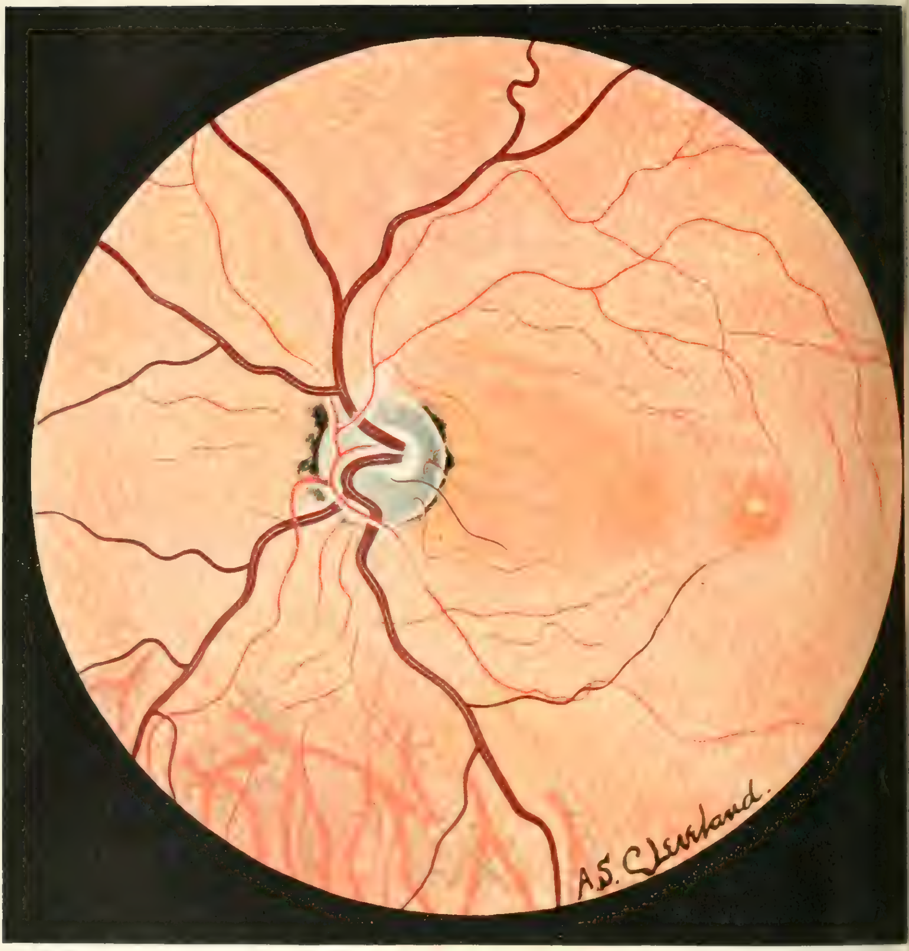
53. "Report of a Few Cases of Retinal Disease Following Febrile Affections that Attacked the U. S. Troops in Porto Rico During the Recent Campaign." W. K. Rogers, Columbus, Ohio.

54. "Relation Between Glaucoma and Detachment of the Retina; With Report of a Case." Allen C. Haight, Chicago.

55. "Relative Frequency of Iritis in Syphilis and Rheumatism Observed in 3,000 Cases. Randolph Brunson, Hot Springs, Ark.

56. "Electrocautery in Affections of the Lids and of the Cornea." Flavel B. Tiffany, Kansas City, Mo.

Authors are requested to send *at once* to the secretary, Dr. Charles H. Williams, the names of three members of the Section with whom arrangements can be made for the discussion of their papers.



BINNER-CHI.

TOTAL EMBOLISM OF THE ARTERIA CENTRALIS RETINAE.
CILIO-RETINAL VESSELS.--CASEY WOOD.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JUNE, 1899. NO. 6. NEW SERIES

ORIGINAL ARTICLES.

A CONTRIBUTION TO THE TREATMENT OF EMBOLISM OF THE CENTRAL ARTERY OF THE RETINA.

BY CASEY A. WOOD, M.D.,

Professor of Clinical Ophthalmology in the University of Illinois.

With Colored Frontispiece and Illustrated.

It is not to be supposed that because a disease does not readily respond to treatment that one should neglect all therapeutic measures. Yet a good deal may be said in favor of the *laissez faire* policy in the care of many, if not most of the examples of retinal embolism that come under one's notice. The fact that not a few cases of partial and even of total embolism have recovered without any treatment at all, may well give rise to the suspicion that some at least of the reported recoveries might have occurred without active interference, and that the happy issue was due to an accidental dislodgement of the plug or to the disintegration, or absorption of an imperfectly organized embolus. Having had an experience of some half a dozen cases in which all of the ordinary and some extraordinary measures were adopted, I thought it might be of interest to report these therapeutic experiences.

Case I.—*At first total* (*?*), *subsequently partial, embolism; embolus visible; recovery without treatment; cardiac disease.*

A full report of this case is published in Knapp's *Archives* for 1890. No remedial measures were employed, and I was able to watch the patient daily for three weeks after I first saw him—two days after the embolism.

H. W., aet 23, clerk, was talking to a friend in the street, when, without warning, he suddenly "lost all the sight in his left eye." There were no other symptoms and blindness remained complete for several hours. Then vision gradually returned in the affected eye, and next day he could see very well. He applied for advise simply to ask whether it would be safe for him to return to work. He seemed a healthy young man, and complained of nothing except shortness of breath after prolonged exertion. When seven years old he had an attack of acute articular rheumatism, and since then four other seizures. On examination I found an hypertrophied left ventricle, while a loud systolic bruit, propogated upwards, could be heard at the midsternum. There was marked increase of arterial tension. Patient is myopic, but with correction obtains perfect distant and near vision.

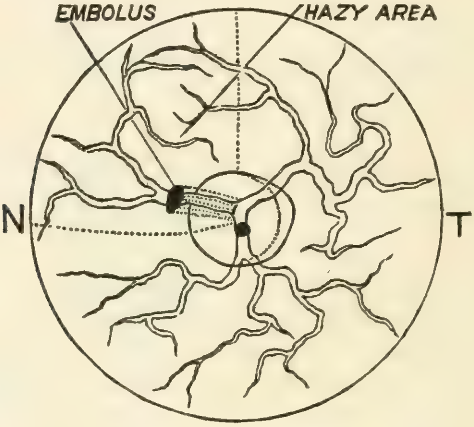


FIG. 1. Left Eye. Case I.

With the mirror the R. E. is normal, except a myopic conus. The left eye shows fine vitreous opacities. The upper inner quadrant of the retina is hazy, but there are no gross changes in this locality. Macula normal. The inner half of the O. D. is redder than the outer, and on its temporal border is a small crescent. No hemorrhages. Half a disc diameter from the edge of the papilla, up and in, is a small, well-defined yellowish spot. It lies immediately over, or at any rate, obscures the outline of the *ramus nasalis superior* at that point. The central artery divides (see fig. 1) about the middle of the disc into two branches, and the division of one of the latter into the usual superior nasal and temporal twigs takes place before the edge of the disc is reached. The whitish spot referred to is situated in or about the arterial twig one disc-diameter from its junction with the larger branch. That portion of the vessel that lies between the yellow-whitish spot and its origin on the disc surface has a reddish outline and seems to be swollen.

My belief that the yellowish spot was probably an embolus, was concurred in by Mr. Gunn, in whose Moorfields Clinic I had charge of this case. The swollen trunk of the artery was later seen to have lost its peculiar arterial reflex, and looked as if it might contain a blood clot.

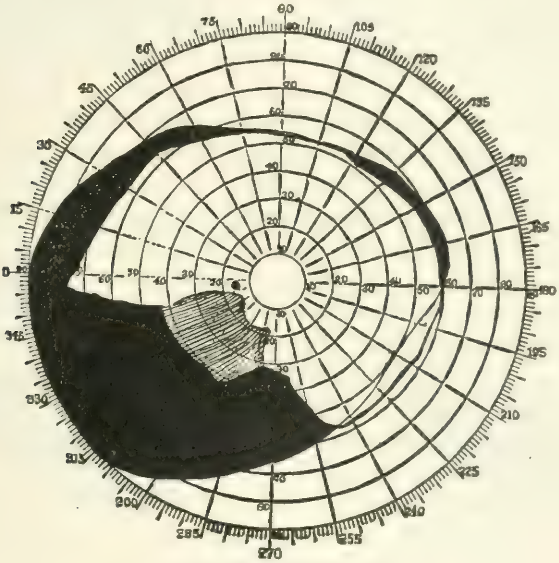


FIG. 2. Left Eye. Case I.

On admission the patient's field for white was taken. It will be noticed (fig. 2) that an irregular area of indistinct vision for white (seen as gray), in which there is no color perception, extends from the fortieth to the fifteenth parallel in the lower and outer quadrant of the chart. No essential variation from these limits occurred while the patient was under observation.

In a week the contour of the affected vessel is better defined, and the artery appears lighter in color and smaller than before. The corresponding vein is unaffected and the œdema continues about the same. When last seen a clearer picture of the fundus could be had although the limits of the hazy area can still be made out, the choroidal coloring being replaced by gray. The patient has not discovered the defect in his field, and is not conscious of it unless he closes his better eye.

Here we have a case where *complete* blindness (probably due to primary blocking of the central artery) persisted for several hours, and a partial defect was noticed by the patient for twenty-four hours. What curative value would have been assigned to the use of massage, iridectomy, paracentesis corneae, sclerotomy or eserin, if any of these forms of treatment had been resorted to in this case as soon as the blindness had been observed ?

CASE II.—*Partial embolism in an apparently healthy subject; massage and iridectomy; gradual improvement in central vision and extension of the field.*—J. N. S., aged 26, came to me August 30, 1894, complaining that, ten days before, his right eye became suddenly blind. He had never had any trouble with his eyes except some infantile complaints that passed off without leaving any ill effect. His habits are good; there is no history of syphilis or rheumatism, and the patient has observed no departure from good health except a little headache the whole morning before the attack. The condition of his viscera was reported by a competent physician to be normal. He seems to be a strong and well-developed man. V.L.=20/20 and Jaeger 1. The vision in the left eye is 20/40, and patient reads Jaeger 1 when the type is held above the horizon. Objects held in front of him appear "cut in two." There is some scleral injection of the right eye. I discovered on questioning him that almost immediately after the accident the eye had been very thoroughly massaged by my friend Dr. F. C. Hotz, without any improvement in vision.

The ophthalmoscope shows a marked œdema of both upper quadrants of the right retina. There is a small hemorrhage at the outer margin of the disc, and what looks like an embolus at the bifurcation of the superior branch of the artery. The veins and inferior branch of the artery are larger than the upper vessels. In view of the fact that the eye had already been treated by the method referred to, I decided to do an iridectomy upwards in the right eye. This was done the next day after seeing the patient, and was followed by a measurable improvement in the patient's sight corresponding to a definite enlargement in his visual field. I am not prepared to assert that the increase of visual power was due to the operative procedure, but present the history as entered in my case book. On September 2d the retinal œdema was less and the vessels better seen. September 8th the plug (?) was no longer visible. September 12th. The patient sees hand-movements below the horizon, " in spots." The outline of the disc is clearer, and nothing can be seen of the supposed embolus. The retinal capillaries above are visible for the first time.

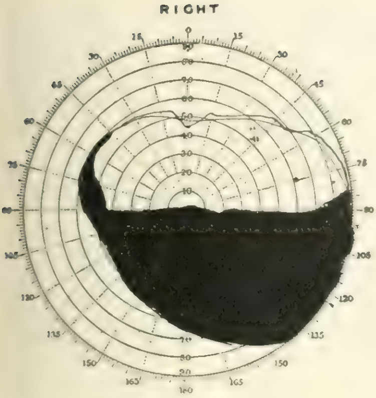


FIG. 3. Case II. No. I.

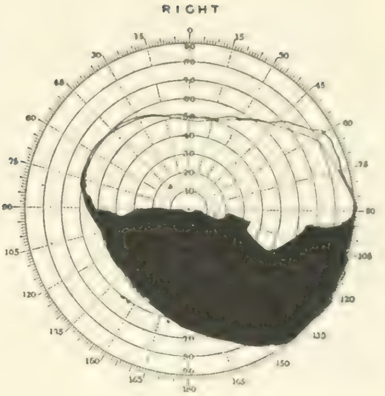


FIG. 4. Case II. No. 2.

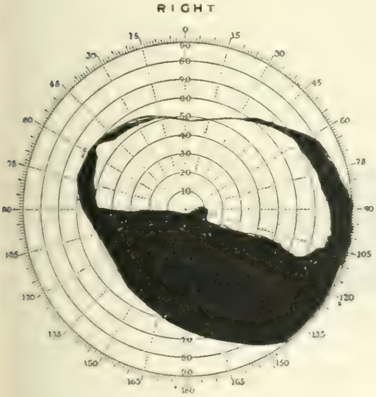


FIG. 5. Case II. No. 3.

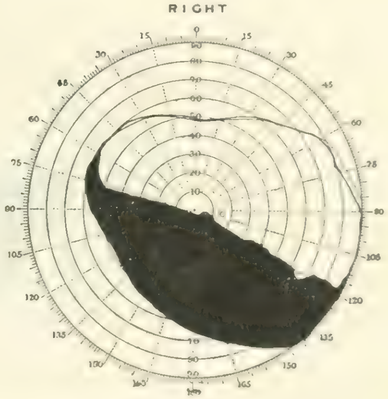


FIG. 6. Case II. No. 4.

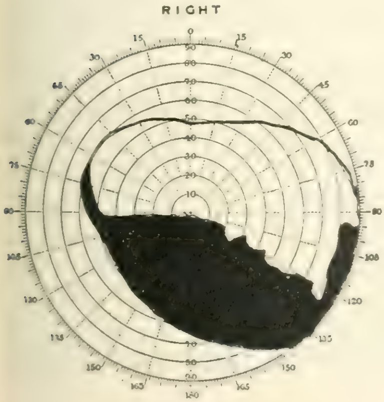


FIG. 7. Case II. No. 5.

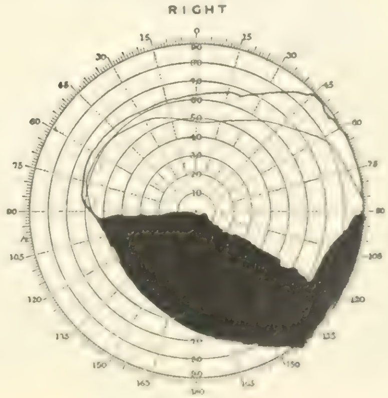


FIG. 8. Case II. No. 6.

I now saw the patient at longer intervals. January 16, 1895. Attempts to read bring on pain at the back of the right ball, accompanied by scleral injection. Otherwise the eye is quiet. Tn. V.R.=20/20—and Jaeger 1, with the types held in the usual position. The choroidal pigment in the upper quadrants of the retina cannot be as distinctly seen as in the lower. The branches of the superior artery can with difficulty be traced beyond the second bifurcation, where they begin to look like glistening whitish lines. The disc is of good color. March 8, 1895.—The patient has been doing work, with success, as a bookkeeper, and now complains of none of the old eye symptoms. The mirror shows the fundus changes to be the same as last recorded. V.R.=20/20, almost, and Jaeger 1 at 14 inches.

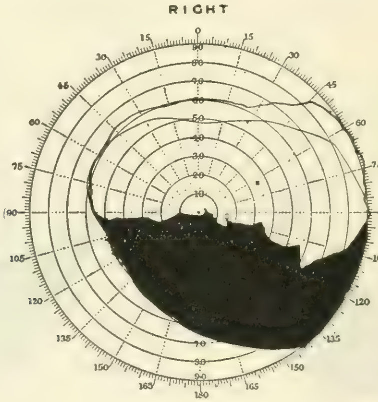


FIG. 9. Case II. No. 7.

CASE III.—*Total embolism of the left artery; organic disease of the heart; retention of a small island of precipient retina; treatment by massage with slight improvement.*

D. T. B., aged 57, consulted me on February 20, 1895. He gave a history free of all ocular troubles until the evening of February 19th, when he noticed a blur suddenly appear over the left eye. Closing the right eye he discovered that he was not able to do more than distinguish light from darkness. He had no pain at the time, and now has only a slight feeling of uneasiness in the globe. His health has not been good for several years past and he has had several attacks of acute articular rheumatism. Dr. Arthur Elliott reports that he is the subject of a chronic interstitial nephritis. Dr. R. H. Babcock examined him and sent me the following note: "In the case of the patient whom I examined this afternoon I find a loud, mitral systolic murmur, but no secondary signs indicating a great degree of regurgitation. A faint systolic murmur, seemingly of different character, is audible in the aortic area and transmitted into the right common carotid. There is also chronic induration and quiescent cavity with vicarious emphysema of the apex of the right lung. The left radial artery shows slight thickening. I conclude that the sudden occlusion of the left central retinal artery was due to an embolus, either an atheromatous particle from some patch on the intima of the aorta, or a minute vegetation from the mitral valve. If the latter, it might be owing to a recent endocarditis engrafted on an old process. The history of articular rheumatism 24 years ago favors the conclusion that the mitral murmur is due to old endocarditis rather than atheroma." Vision in right eye is $\frac{2}{3}$, improved to normal by glasses. Fundus normal. There is no perception of light in the left eye except when the focal illumination is employed. Pupillary reaction to light hardly perceptible.

The ophthalmoscope reveals a typical picture of total embolism. The retinal œdema is very marked, there is a distinct cherry spot at the macular site, the arteries are small and in several places a sluggish blood current can be seen meandering through partially-filled vessels. Pressure upon the globe during the examination with the mirror has an appreciable effect upon the circulation. The edges of the disc are ill defined owing to the swelling. There is no sign of an embolus. I was encouraged to think that something might be accomplished by massage of the globe, and for several days gave the patient the benefit of it after the manner described by Fischer. This observer states that in his successful case the patient did not complain of soreness of the eyeball after half an hour's kneading, but it was not so with my patient. I was obliged to desist after ten minutes' firm but gentle pressure. This was repeated as often as it could be done without setting up too much irritation—two or three times during the day. The next day I could not make out any circulation in the vessels whatever; the veins were distinctly larger than on the previous day and seemed to stand out as dark lines irregularly covered by the swollen tissue. The arteries outside of the disc are with difficulty seen. The patient has now some perception of ordinary daylight. February 25th: Massage was stopped to-day as the patient complained of tenderness of the globe, and I did not believe that any good purpose would be subserved by continuing it. V. L. = perception of strong light over most of the field, hand movements toward the nose. The retinal arteries are entirely obscured, with the exception of a small nasal branch, indicated by a faint whitish streak. Outlines of disc cannot be seen by the direct method. The papilla is also swollen and resembles the surrounding retina. Patient thinks he sees faint rays of light in outer field. March 6th: Hand movements toward the nose and center. The patient reports that for several days a bright, glittering, star-like light has persisted in front of his left eye. The background seems to be clearing up; the outlines of the disc are indistinctly seen. March 16th: There is a small island of precipient retina subtending two or three degrees in the otherwise blank field of vision, corresponding to the inner aspect of the retina, where movements of objects are perceived. With the partial disappearance of the œdema the arteries do not seem to be entirely obliterated, but are much reduced in size, with white lines running along a few of them. An area double the size of the disc, with the fovea for its center, is sprinkled with minute whitish dots. These overlie a retinal vein. October 4, 1895: The fundus changes vary but slightly from those noted at the last examination. With the right eye closed patient can perceive the outlines of objects when they move past the portion of his field previously observed as sensitive. He thinks that this ability to distinguish form has somewhat improved.

CASE IV.—*Total embolism in a healthy woman; massage and narrow iridectomy; some improvement in vision.*

Miss H. N., aged 26, consulted me March 16, 1895, for a sudden blindness of her left eye. She is a stout, well-developed girl, and her family physician, Dr. A. G. Perkins, reports that all the internal organs are normal, and that she is perfectly healthy, with the exception of some menstrual irregularity. There is no evidence of any previous eye affection until the early morning of the day I first saw her. She remembers that during the previous night she was awakened by a "hammering" on the left side of her head, and when morning came she was unable to perceive light with her left eye. I examined her at 10 A. M. There was doubtful perception of light in the left eye, with focal illumination. The pupil was semi-dilated, and did not contract to ordinary light. V. R.= 20/20—and Jaeger 1. Fundus normal, except a few opaque nerve fibres. The *left* background showed a clear picture of total embolism. There were "beady," swollen veins all over the fundus, their outline being greatly obscured, and in places covered by the uniform, whitish swelling of the retina. Except near the disc the arteries are invisible, and in that situation are almost buried in the œdematous background. There is a beautifully marked "cherry-spot" macula, looking like a dab of red in a white field. A faint brush of opaque nerve fibres stands out between the macula and the disc, the vessels on the surface of the latter being distinctly traceable. There is no sign of an embolus; and there are no papillary cilio-retinal vessels. On pressing the globe gently distinct pulsation in one disc vein can be made out. This pulsation was sometimes visible when no pressure was made. On the afternoon of the first day the patient complained of aching in the eye and that movements of the globe were painful. March 17: Now no pain on excursion in various directions. The retinal vein trunk on the disc still pulsates, but the branches being obscured by the œdema one cannot say whether the movement is propagated beyond the disc border or not. The superior branch can barely be seen for a d.d. beyond the papilla, where a sluggish stream of blood is seen. V=hand movements. With the moving hand the field may be roughly determined. It is circular, eccentric, includes the pole and is about 15° in diameter, stretching about 10° toward the temporal side. March 19: Faint pulsation may still be seen. Lazy blood-current before mentioned.

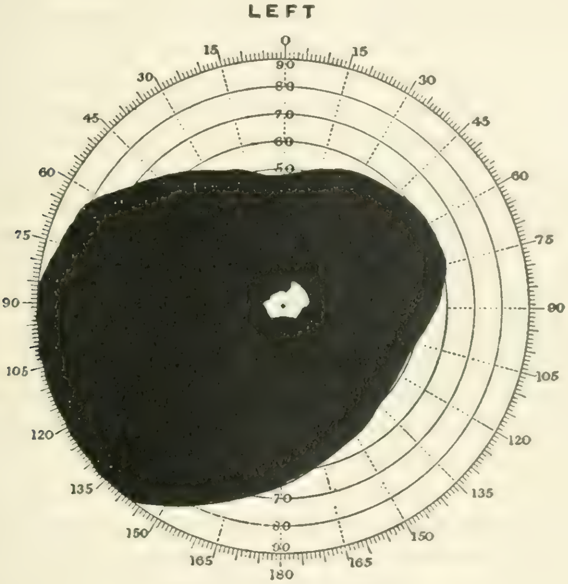


FIG. 10. Case IV. Oct. 1895.

I at once vigorously applied massage (followed by hot fomentations) to the left eye for two or three minutes at a time, from four to six times daily, until the 21st, desisting as soon as the eye became tender or the patient complained of pain. I now did a small upward iridectomy.

March 23d: To-day the wound has entirely healed, and a rough map of the field of vision shows its extension to the twentieth parallel, the pole for center. The veins appear larger, fuller and more prominent, their outline being less "beady" than at first—conditions probably due to the decrease in the retinal swelling. March 25: No pulsation can be discovered in the distended vein. March 29: There is less swelling in the macular region. The cherry-colored area is less marked; small, whitish, punctate spots stretch from the fovea to the disc margin. The fundus elsewhere has assumed a dirty, grayish red. The veins are somewhat smaller and the disc is ill defined. April 8: A few cholesterine crystals are scattered over the fundus. April 28: V=hand-movements. There is a blotch of grayish white occupying the foveal region; the cholesterine deposits are more numerous. Veins large, arteries very small, outlines of disc fairly clear. October 27, 1895: The patient states that her vision is greatly improved, and thinks she can read and see in the distance better when the left eye is covered. There are not many changes in the fundus, although the papillary border is more readily made out. The 10 mm. white object of the perimeter being readily seen, I had her field mapped out. See Fig. 7. V=fingers at two feet, eccentrically.

CASE V.—*Total embolism in a patient subject to chronic cardiac disease; preservation of partial vision by cilio-retinal vessels; treatment of small avail.*

W. H. M., aged 56, appears to be in good general health. Nevertheless twenty years ago he had several attacks of acute articular rheumatism, and Dr. Einarson reports some form of organic disease of the heart. He began to wear glasses eight years ago for near work, but has never had any trouble with his eyes apart from this presbyopia. He consulted me on Nov. 28, 1898, and reported that while reading the evening before he found, suddenly, that he could not see anything with his left eye. There was and is absolutely no other ocular symptom. V. R.=$\frac{20}{20}$ minus, and Jaeger 1 with glasses; V. L.=$\frac{20}{100}$, and Jaeger 16 with glasses, both eccentrically. Pupillary reactions almost normal. The left fundus presents a remarkable picture. The reddish tint of the normal background is replaced by an opaque whitish appearance except within a small area that stretches from the macular region to beyond the disc. The line of demarkation between this creamy-colored œdema and the normally-tinted retina in this neighborhood is sharply defined. One can everywhere make out the swollen edges of the retina as it adjoins the unaffected part. The fovea is occupied by a small, reddish, black spot. The veins have a sausage-like appearance, and are partially covered by the retinal swelling. The exact state of the arteries cannot be made out, as they are even more concealed by the swelling. The disc is well defined and apparently not affected by the general œdema, except that it has to some extend lost its normal transparency and is a little paler than the right papilla. The whole of the disc seems to lie within the unaffected area, although the latter mostly extends beyond its temporal edge. Running from the margin of the papilla toward the macular region, are at least two cilio-retinal vessels. (See colored frontispiece.) Recognizing this case as one of retinal embolism, massage was employed at once and thoroughly carried out, in conjunction with amyl nitrite inhalations, for over a week.

December 3: The œdema and interrupted outlines of the veins—still partly covered by swollen retinal tissue—are still seen. The nourished area appears smaller and its outlines are not, however, so well defined as before. December 8: Patient thinks he sees better. The retinal swelling is not so marked, nor is the contrast between its whitish character and the normal retina. Feb. 19, 1899. The ophthalmoscope shows the area supplied by the cilio-retinal vessels to be faintly distinguishable from the remainder of the fundus. Except the smallest arteries all the vessels of the background can be traced to the periphery. The macular region is studded with white dotted exudates. The cilio-retinal vessels are smaller than they were, although they are easily seen. The patient has vision of $\frac{2}{7}$—and Jaeger 14 in the left eye. The field of vision is measured with much difficulty in this case, and although the charts show unanimity so far as the size of the field is concerned they do not apparently correspond to the position of what one might expect to be its exact locality. Those reproduced in figures 11, 12, 13, 14, 15 were taken with all possible care.

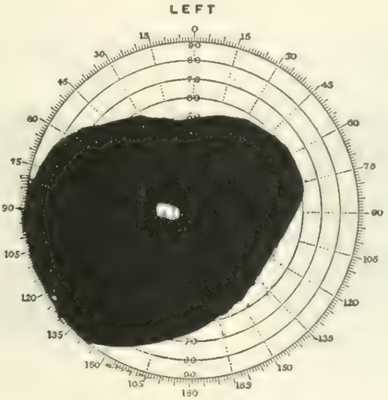


FIG 11. Case V. No. 1.

The painting of the fundus (see frontispiece) is a faithful reproduction by Miss Cleveland of the background as it appeared on Dec. 10, 1898. The boundaries of the normal retinal area were much more plainly marked when seen two days after the blindness was discovered.

The fact that must always be reckoned with in estimating the value of any remedial measure for retinal embolism is the tendency of almost every case to improve, with or without treatment. The instances are exceedingly rare where, either in total embolism or in obstruction of the larger branches of the central artery, no blood circulates through the vessels. There is usually some retinal area that, as a result of a partial blood supply, survives and functionates after it has passed through the initial stage of œdema and strangulation, even if it be eventually destroyed as the result of atrophy of the nerve itself. Such functionating retinal oases or sectors increase in area because of the extension of these reviving areas. The nutrition of the retinal strip that bounds the margin of the defect is not so entirely cut off from its proper nutrition as are the central portions. When the œdema subsides this partially-affected border recovers and vision is improved.

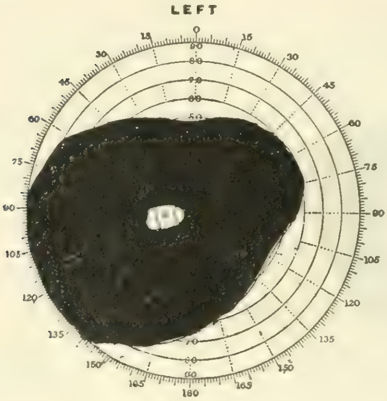


FIG. 12. Case V. No. 2.

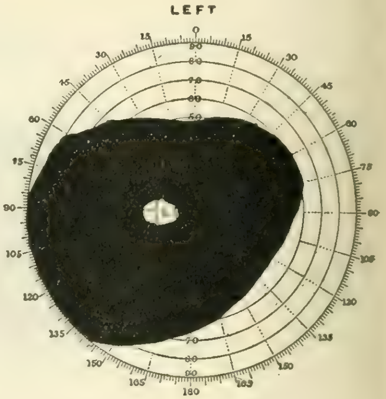


FIG. 13. Case V. No. 3.

The extent of the damage and the possibility of its repair also depend upon the position and character of the embolus. If this be a solid,fibrous plug, caught at the bifurcation of a vessel, it will not entirely block the passage of blood, and the final effect upon the area supplied by it will be less disastrous than if the embolus be of softer material and, adapting itself exactly to the lumen of the vessel, completely shut off the blood stream.

Another chance of improvement in vision apart from treatment, hangs upon the possible absorption of the plug. Several autopsies have shown that this has entirely disappeared within a comparatively short time. Should the embolus undergo even a partial absorption before destructive secondary changes in the obstructed vessels, optic nerve and precipient elements of the retina declare themselves, it is easy to understand that, with a return of the nutritive supply, the less injured parts of the retina will once more resume their lost function.

So far as iridectomy is concerned—with it as a remedy one may include sclerotomy and paracentesis corneæ—for the sake of a sudden reduction of the intraocular tension, it seems as rational now as it did to Graefe in 1859. If the caliber of the obstructed vessel be increased even for a few days after the critical moment of the embolism, it is surely to be desired. Amyl nitrite inhalations, as suggested by Harold Gifford, might well be employed either alone or as an adjunct to iridectomy, paracentesis or massage. The reputation of the last-named remedy rests upon a few successful cases. One cannot, however, read Fischer's monograph, or accounts of similar cases, without wondering what became of the embolus, exactly how it was affected by the massage of the eyeball, and what would have happened had nothing been done in these cases. As long as it retains its form and solidity one can imagine no escape for the embolus. Its effect as an obstruction continues even if, as Fischer supposes, the operation of massage produce a return current (producing a *vis a fronte*) that thrusts back the valve-like embolus, allowing for an instant a side stream of blood to flow to the impoverished retina. Complete recovery,

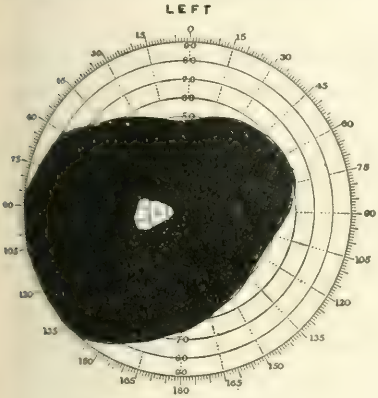


FIG. 14. Case V. No. 4.

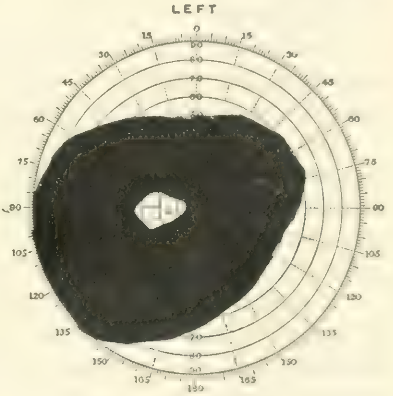


FIG. 15. Case V. No. 5.

after dislodgment of the plug, demands its early absorption after it has been broken up into minute fragments and so carried to the finest retinal arterioles.

The probability is, also, that cilio-retinal anastomoses exist apart from the vessels so commonly visible at the disc. In case No. III the field for white certainly shows that healthy retina exists beyond the nasal edge of the disc, yet it did not so appear at any time as seen by the ophthalmoscope. The most careful examination with the mirror does not reveal any cilio-retinal vessels except those that (as shown in the colored painting) run toward the fovea. Why should we not have similar anastomoses in other parts of the fundus? May not the existence of peripheral retinal oases (as pictured by many writers) in the blind areas of embolism be thus explained?

The visual field cannot be more than approximately measured in these cases of dulled and eccentric vision, and this is true both as to its size, shape and position. Even when the greatest care is observed by the surgeon, or where such devices as watching the fixing eye while it gazes upon a finger end for a fixation point are employed, only an approximation to correctness can be obtained. This, I take it, will partly explain the apparent contradiction implied in the histories of some cases of extensive embolism and their accompanying perimeter charts.

A word as to the effects of massage upon the damaged eye is in order. In two of my cases where this remedy was employed the globe became decidedly tender and scleral congestion was evident after two or three minutes' steady pressure. In one of them the embolism had been preceded and followed by pain and soreness in and about the eyeball, and doubtless the irritability of the structures had much to do with the tenderness after massage.

I do not believe that, with the majority of American patients at least, it is possible to keep up effective kneading of the globe for more than two or three minutes at a time, and it seems more rational to attempt to accomplish this three or four times daily than to continue the massage half an hour once a day.

Use has been made of and reference given to the following articles:

Casey Wood. Embolism of the superior nasal branch of the arteria centralis retinae. *Archives of Ophthalmology*, 1890, p. 203.

R. Fischer. Ueber die Embolie der arteria centralis retinae. Leipzig, 1891.

Arthur Benson. On a case of embolism of the central artery of the retina, modified by the presence of a cilio-retinal artery. *Ophthalmic Hospital Reports*, Vol. X, p. 336.

Angelucci. Sulle trombosi ialine dei vasi dell' occhio. *Annali di Ottalmologia*, Anno XIX, p. 503. Compare also Anno VIII, 407 e IX, 197. Trombosi della vena centrale della retina.

P. H. Mules. On embolism of a branch of the central retinal artery treated by massage, with restoration of the visual field. *Trans. Ophthal. Soc., U. K.*, VIII, p. 151.

E. Nettleship. Cilio-retinal blood vessels (additional cases and remarks). *Ophthalmic Hospital Reports*, Vol. X, p. 161.

A. von Graefe. Embolie der arteria centralis retinae als Ursache plötzlicher Erblindung. *Archiv für Ophthalmologie*, 1859, I, S. 136.

See also cases by Dr. Eales and Dr. Wood-White, reported in the *Ophthalmic Review*.

A CASE OF CHANCRE OF THE CONJUNCTIVA.

BY E. C. ELLETT, M.D.

Formerly House Surgeon in the Wills Eye Hospital, Philadelphia; Ophthalmic and Aural Surgeon to St. Joseph's Hospital, The City Hospital, The Lucy Brinkley Hospital, The Children's Home, The Leath Orphan Asylum, and the Shelby County Poor and Insane Asylum, Memphis, Tenn.

Illustrated.

While extra-genital chancres are not exactly rare, in the majority of such cases the diagnosis rests on scanty evidence, or is arrived at by the history of infection or the possibility of infection. The publication of a case in which there is no "missing link" in the evidence seems to be justified as a means of keeping before the physician the possibility of the occurrence of a primary sore in the most out-of-the-way places, and thereby guarding against his falling into an error of diagnosis alike mortifying to him and disastrous to the patient.

Jas. S., aged 24, was referred to me by Dr. Marcus Haase for an inflammatory affection of the right eye. The condition had persisted for about four days and presented externally the appearance of a moderate sized chalazion situated at the inner extremity of the upper lid. On everting the lid an ulcer rolled into view, whose size and location are well shown in the accompanying photograph.

The edges were elevated and whiter than the center, and the base was firm and unyielding. There was a moderate amount of secretion, no pain, but a stiff, sore feeling, and the surrounding ocular and palpebral conjunctiva injected. The preauricular gland on the right side was much enlarged and quite hard and the supervical cervical glands in front of and behind the sterno-mastoid as well. There was no history of possible infection, except that he had often washed his face and hands in hotel lavatories and dried them on the public towel.

I presented this patient to the Memphis Medical Society, where he was examined by several of the members. The diagnosis seemed to be sufficiently plain, and those who expressed an opinion agreed that it was probably specific. The patient was taken to St. Joseph's Hospital in order that he could be closely observed—a solution of boric acid was given him but no internal treatment ordered, as it seemed best to await the appearance of the secondaries to convince the patient of the nature of his trouble. He was not inclined to believe that it was specific. Four weeks from the day of the beginning of the eye trouble a syphilitic roseola appeared on his body. This eruption was quite typical, and there was at this time general adenopathy. The primary sore had hardly changed its appearance. The patient was anxious to leave the city, which he did the day the eruption appeared. I assured him that there could be no possible doubt as to the nature of the trouble, and hope he profited by the knowledge.

Continental Building.

FISTULA OF THE ORBIT DUE TO DISEASE OF THE LACHRYMAL DIVISION OF THE ETHMOIDAL CELLS; OPERATIONS AND CURE.*

BY G. E. DE SCHWEINITZ, A. M., M. D.
PHILADELPHIA, PA.

Illustrated.

In November, 1897, I presented to the *Philadelphia County Medical Society* † the report of a case of abscess of the orbit which resulted from suppurating ethmoiditis, and described an operation which resulted in its radical cure. In this paper I referred to certain fistulas of the orbit above the internal tarsal ligament due to disease of the ethmoid, which Gruening ‡ had described and cured by forcing with a strong probe an opening through their bases into the nasal cavity, and thus facilitated drainage. It is to the treatment of this class of cases that I wish to direct your attention by the following report:

Kate Patterson, aged 19, born in Pennsylvania, unmarried, a factory worker, came to the Philadelphia Polyclinic in October, 1897, with the hope of obtaining relief from what she believed to be a purulent discharge from the lachrymal duct.

History.—The family history is good, the mother being a healthy, hard-working woman. When the patient was seven years of age she had chicken-pox, followed shortly afterwards by scarlet fever. Some time later, probably when she was about eight years of age, the mother noted a small lump in the neighborhood of the inner canthus, which was poulticed and discharged purulent material.

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* Paper read before the *Ophthalmic Section of the College of Physicians of Philadelphia*, March 21, 1899.

† *Philadelphia Medical and Surgical Reporter*, November 20, 1897.

‡ *New York Eye and Ear Infirmary Reports*, January, 1896.

In 1892 she was taken to a hospital, where the tear-duct was opened and probed a number of times, but pus continued to form and to exude from an opening near the inner canthus. She was then admitted to this hospital, where she remained for five months, according to her statement the lachrymo-nasal duct being probed daily. A number of minor operations also appear to have been performed, probably curettings of the fistulous track. After leaving the hospital she continued as a more or less regular attendant in its dispensary service, the treatment consisting of irrigation of the lachrymo-nasal duct and syringing of the sinus with peroxide of hydrogen and other antiseptic materials. As before stated, in the fall of 1897 she presented herself at the Philadelphia Polyclinic.

Examination.—The girl was small, but well formed, with good color, and a voice typical of nasal disease. Examination failed to reveal anything abnormal in her general condition. The eyes, which were practically normal, require no special comment. The right canaliculus was widely dilated, and the duct admitted with the greatest ease a No. 6 Bowman probe. When this was in place it was evident that a fistula, surrounded by slightly everted edges and a few granulations, which opened just above the inner tarsal ligament, did not communicate with the duct, nor apparently with the lachrymal sac. A second probe was next introduced into the fistula, and after a little difficulty was passed inward, slightly backward and downward. With the two probes in place the patient was taken to the laryngological rooms, where Dr. Walter J. Freeman made a nasal examination, which revealed that the one probe had passed through the lachrymo-nasal duct and was in its ordinary position, while the other one could be seen in the middle meatus, occupying another position, and at that time was supposed to traverse the frontal cells.

The patient had been examined by Dr. Freeman four months before, when he had noticed deviation of the septum to the right, thickening of the cartilage on that side, and, on rhinoscopic examination, pus coming from the right side of the nose, but its origin was not determined. There were synechiae also between the turbinals and the septum on both sides.

After consultation with Dr. Freeman, it was determined that an operation should be made from the orbit in order to secure, as Dr. Gruening had advised, intra-nasal drainage.

On the 16th of November I made a curvilinear incision, beginning just below the fistulous opening at the inner tarsal ligament, and passing along the side of the nose and the margin of the orbit, as far as the supraorbital foramen. The tissues were dissected away, the margin of the orbit above was explored, and the region of the ethmoidal foramina was examined and seen to be healthy. The fistulous track was then with some difficulty followed and found to open just above the tendo oculi and to pass into the nasal chamber. A quantity of carious bone was curetted away, and a free opening was made into the nasal chamber. Through this opening a fenestrated drainage tube was introduced, brought out through the anterior naris, and held in position in the manner seen in the accompanying illustration (fig. 1). The subsequent treatment consisted of daily irrigation of this tube with various antiseptic solutions—saturated boric acid lotion, bichloride of mercury (1–8000) and formaldehyde (1–6000). There was no reaction, not even a rise of temperature, and only moderate swelling of the tissues around the eye.

On the 23rd of November the large drainage tube was substituted with a smaller one and the irrigations continued, and on the 29th of the same month the patient was discharged from the house, but came daily for intra-nasal treatment and irrigation of the drainage tube. This part of the work was attended to by my resident physicians, Dr. Haines and Dr. Van Meter.

There was marked improvement at first, and for a time we thought the fistula had closed. Later, in January, slight swelling of the tissues began in the neighborhood of the old fistula, which was relieved by a flow of pus. Furthermore, the introduction of a probe indicated that there were still undetached areas of carious bone, probably intra-nasal. Dr. Freeman and I now agreed that as the orbital end of the diseased tract had been thoroughly curetted, the process should be attacked from the intra-nasal side. Dr. Freeman very kindly undertook thorough treatment from this standpoint. His notes are appended:

"At Dr. de Schweinitz's request, I took charge of the case to see what could be accomplished by nasal treatment. The septum was so much hypertrophied and the tubercle of the septum was so enlarged it was impossible to see much of the middle meatus and the middle turbinal was almost entirely concealed. I found later that it was united by synechiæ to the septum, and there were other bridges in the nose, showing that a severe nasal inflammation had existed in the past. From these evidences of previous inflammation, there is no doubt in my mind but that the orbital fistula arose from the nose.

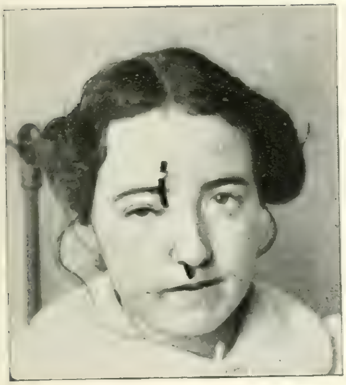

Fig. 1.
Introduction of drainage tube after making an opening through fistula into nose.

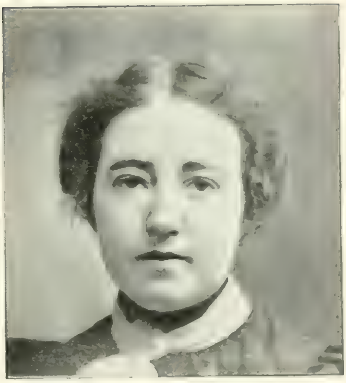

Fig. 2.
Result after complete cure of fistula.

As the drainage tube was not draining well, an aluminum stylet was substituted for it. I then removed the obstructing hypertrophies of the septum with the electric trephine, until the olfactory cleft could be readily seen, and later cut through the more dense masses of bone around the stylet, which I could now readily see projecting into the nose. Using curettes and delicate biting forceps on the softer portions, the lachrymal cells were obliterated until only a thin plate of bone lay between the nose and the orbit. The various synechiæ were broken up and the nose put in good hygienic condition. Just four months from the time the stylet was put in it was removed, as the purulent discharge into the nose and from the orbital fistula had entirely ceased."

The ultimate result may be seen in the accompanying illustration (Fig. 2). There is practically no deformity—only a slightly indrawn cicatrix at the seat of the old fistula. The function of the eye is normal in all respects and the intra-nasal structures are free from active disease.

In order to cure this fistula, which had existed certainly for six and probably for eight years, for it no doubt dates to the time of the swelling which the mother describes at the inner canthus of the eye, required nearly seven months and a good deal of operative interference, the entire credit of the final work belonging to Dr. Freeman. Whether a case of this character could be cured by intra-nasal treatment alone does not appear from the present record, as both the orbital and intra-nasal methods of reaching the diseased area were employed. I am inclined to think, and Dr. Freeman, I believe, agrees with me, that it was the part of wisdom first to enlarge the fistula from the orbital end, and clear out the dead tissue which was found there, and then attack it from the nose. Personally, I believe that I might have curetted with greater freedom at the original operation and perhaps shortened the intra-nasal treatment, but with the knowledge that the septum was greatly hypertrophied, and that synechiæ attached the middle turbinated body to the septum, it seemed safer to trust to Dr. Freeman's skillful intra-nasal manipulations to complete the cure.

My chief reason for calling attention to this case, no matter which form of operation is considered the wiser, or whether, as I believe, both methods may be needed, is to emphasize the origin of certain orbital fistulas. I am inclined to think that they not infrequently must be due to disease either of the ethmoid proper, or, as in this case, of the lachrymal division of the ethmoidal cells, which it will be remembered are located just beneath the extreme anterior end of the middle turbinated body and near its junction with the outer wall, and form one of the divisions of the ethmoidal cells. Furthermore, fistulas of this character may be mistaken for chronic dacryocystitis. Certainly my patient submitted to eight years of treatment directed toward the lachrymo-nasal apparatus without benefit. Indeed, this apparatus was not at fault, or if so, only secondarily, i. e. it was in no sense the original seat of the disease.

ABSCISSION AND COMBINED KERATECTOMY.*

BY GEO. C. HARLAN, M.D.
PHILADELPHIA.

In showing the stump resulting from an abscission, I wish merely to call attention to an old operation which seems to me of late years to be too much neglected. It was performed very frequently, almost universally where only the anterior segment of the ball was diseased, twenty or thirty years ago, and, so far as I know, with almost uniformly satisfactory results; but thanks to the dread, that has been almost morbid, of that *bête noir* of ophthalmic surgery, sympathetic ophthalmia, it has in more recent times been almost driven from the field by enucleation. There is a fashion in operations as in everything else, and the ease and quickness with which enucleation is performed, the little or no trouble that the after-treatment gives, and the comparatively fair chance of never hearing of the case again have enabled this operation to maintain its popularity.

There is certainly a comfort in the radical character of enucleation, but in these times of antiseptic surgery and artificial vitreous, patients are often more than willing to take chances of greater suffering and delay, or even danger, for the sake of appearances, and cosmetic prejudices cannot always be defied. It is, however, not only a question of appearance, though that sometimes means employment and success in life, but there is the annoyance of overflowing tears and collecting discharges, and occasional inflammation of the conjunctival sac, ending too often in cicatricial contractions that banish the artificial eye entirely. As we grow older in practice we become less optimistic in this matter, and learn that the enucleation of an eye and the insertion of a shell is not by any means always the end of the story. Hence the modern search for surgical procedures that will admit a more satisfactory prothesis, and the hope that in future an unmitigated enucleation will be considered a comparatively rare and rather barbarous exception. When the disease is limited to the anterior segment of the ball, this problem would seem to be best met by some form of abscission, retaining the natural vitreous, which is certainly better than any substitute. I think it may be considered an axiom that in such cases the ball should never be enucleated.

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* Read before the *Ophthalmological Section of the Philadelphia College of Physicians.*

The operation which was perhaps formerly most in vogue was advocated by Critchett in 1863 and is known by his name. It is described and figured in some of the older textbooks. The members of the Section are familiar with it, at least as a matter of literature, and it is not worth while to describe it minutely. Four or five threaded half-curve needles transfix the ball behind the ciliary region and are left in place until the parts in front of them are removed, when they are drawn through and the threads tied. The angles of the wound are cut off to make a smooth cicatrix. A similar procedure was described by Wild in 1847. I usually cut away the front of the ball without the use of the long needles, and bring the edges of the wound together with fine stitches. There is not much difficulty in retaining the vitreous if the patient is thoroughly etherized. I have done the operation frequently, and have never met with an irritable stump, or seen one in the practice of others.

Mr. Carter reported a case in which the Critchett operation was followed by loss of the other eye by sympathetic ophthalmia, which he attributed to puncture of a ciliary nerve by one of the needles. In subsequent operations he closed the gap by catgut ligatures passed through the recti muscles and brought the conjunctiva together over them. This is the only record of this accident that I can recall, though not having made a special search I am not prepared to say that there are not others. There may, of course, have been still other cases which were not reported, as we are apt to be modest about rushing into print with our disasters. We all know that a good many cases of sympathetic ophthalmia after enucleation have been reported. If there is a real danger in suturing the sclerotic, it can be avoided by including the conjunctiva and subconjunctival tissue only; or even the superficial layer of the sclerotic, as is done so harmlessly in advancement operations. Or the purse-string operations of Knapp and Wecker may be preferred. The conjunctiva and subconjunctival tissue are dissected up and threads are passed in and out through them, by drawing upon which, after removal of the front of the ball, the gap is closed like the mouth of a tobacco pouch.

Attention has recently been called to this subject by Panas,* who describes an operation which he calls combined keratectomy and which seems to differ from the operation of Critchett chiefly in that the incisions and stitches are placed in front of the ciliary body instead of behind it, so that the choroid is not disturbed and the ciliary vessels are not divided. The corneo-scleral junction is transfixed with a half-curve Reverdin needle, which is made to pass behind the iris and lens, and the cornea is excised in front of it by an incision passing through the margin of the transparent portion. If the iris and lens do not come away with the cornea, they are removed with forceps and scoop and the edges of the wound are brought together by drawing the needle through and tying the thread. Sutures are placed on each side of this one and the projecting angles at the extremities of the wound are cut away to make a smooth cicatrix, as in the Critchett operation. Panas urges this operation in all cases of corneal staphyloma and painful absolute glaucoma. He has performed it in one hundred and fifty of the former cases and fifty of the latter, and has been able to follow the greater portion of them for eight years after. All have been able to wear the artificial eye with perfect comfort. In absolute glaucoma the pain has been promptly and permanently relieved. In panophthalmitis he advises evisceration, but opposes the Mules operation on the ground that any foreign body introduced into the scleral cavity as a substitute for the vitreous is badly borne, gives rise to reaction and ends by being expelled. He, however, gives no statistics to show that these theoretical considerations are supported by facts.

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* *Archiv. d'Ophthalmologie*, September, 1898.

BRIEF REPORT OF A CASE OF FIBROMA OF THE EYE-LID. (PAINFUL SUBCUTANEOUS TUBERCLE OF WOOD.)*

BY CHARLES A. OLIVER, A.M., M.D.,

Attending Surgeon to the Wills' Eye Hospital; Ophthalmic Surgeon to the Philadelphia Hospital.

Illustrated.

The accompanying reproductions of a sketch of the growth in the eyelid, made for me by my friend Dr. Chas. H. Reed, of this city, and a photograph of a portion of the patient's back, taken by my Resident Dr. C. Y. White, of this city, give a very good idea of the general appearances of the condition.

In April of 1896, H. B., a forty-year-old syphilitic was brought to me in the Eye Wards of the Philadelphia Hospital, for study and treatment of a left abducens palsy. He stated that the nodules antedated the pri-

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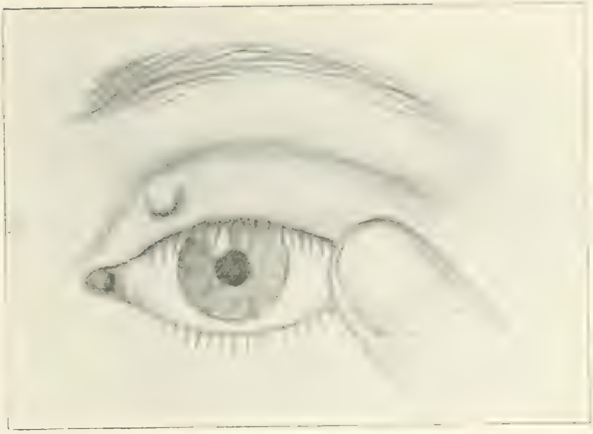
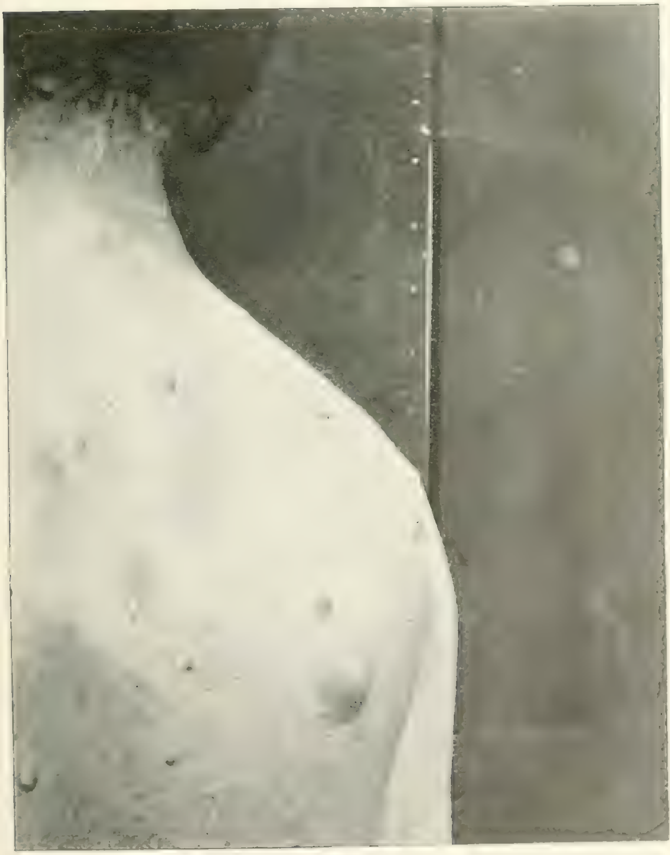
*Read before the March, 1899, meeting of the *Section on Ophthalmology of the College of Physicians* of Philadelphia, Pa.





mary infection of syphilis for a long period of time, and that they were unaffected by medication. The lid nodule, which slowly reached its present size many years ago, had remained stationary for several years' time. Like those on other parts of the body, it had been subject when irritated, though to a less degree, to paroxysmal attacks of radiary pain, lasting for varying periods of time, each attack being followed by a numbness and soreness in the affected part. Latterly, these painful exacerbations had not been so marked. The tumor on the lid, which presented a quite different appearance from an ordinary chalazion, was situated immediately beneath the skin in the subcutaneous tissue. It was prominent, circumscribed, of firm consistence, and freely mobile. No deeper-seated growth could be felt throughout the entire lid-area.

Repeated medication has not had any effect on the growth. Removal and section of one of the nodules showed its true character—curvlinear bundles of densely packed fibrous tissues containing many blood vessels.

The case has been deemed worthy of brief notice, not only on account of the relative infrequency of the disease in the male subject, but by reason of the unusual situation of one of the nodules.

A CLINICAL STUDY OF DOUBLE CHOKED DISCS IN A CASE OF QUIET OTITIC THROMBOSIS OF THE SIGMOID SINUS, WITHOUT PYÆMIA.*

BY CLARENCE A. VEASEY, A.M., M.D.,

Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic; Demonstrator of Ophthalmology, Jefferson Medical College; Chief Clinical Assistant to the Ophthalmological Department, Jefferson Medical College Hospital; Consulting Ophthalmologist, Philadelphia Lying-in Charity, etc.

Illustrated.

THAT optic neuritis sometimes occurs as a complication of suppurative aural disease is now a well-established fact. Probably the first to call attention to this connection was Dr. C. J. Kipp of Newark, N. J. About 1880 he reported that in the examination of fifty cases of purulent inflammation of the middle ear he found four in which optic neuritis was present. Two of these recovered and two died. In a paper published about five years later the same experience as to the mortality obtains, viz: that death ensued in about 50 per cent of the cases in which optic neuritis was found, while all of the cases of supposed intra-cranial extension without optic neuritis recovered.

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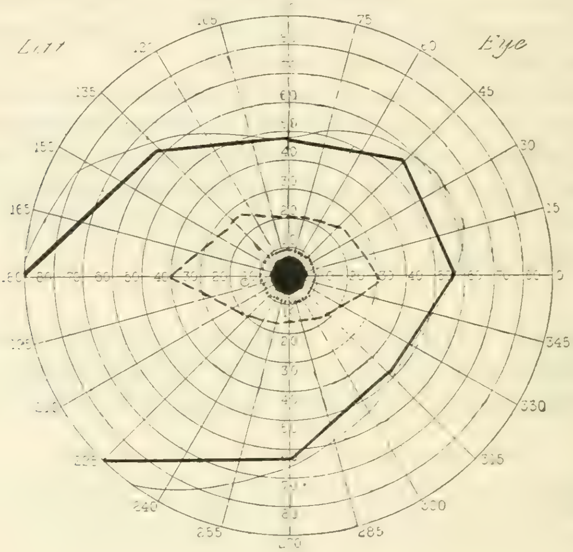
*Presented to the *Section on Ophthalmology of the College of Physicians*, of Philadelphia. April 18, 1899.

In cases of sinus thrombosis consequent upon middle ear disease we also meet with optic neuritis, occasionally but unfortunately, if taken alone, it does not assist us materially in making our diagnosis between meningitis, abscess and thrombosis. But, according to Pooley, it does enable us to conclude that the disease is not limited to the middle ear or mastoid, but has undoubtedly extended to the brain, whether or not there is other corroborative evidence.

Optic neuritis has also been reported in cases of uncomplicated sinus thrombosis. [1]Pitt records four, Whiting three, and Jansen twenty-eight such cases. Among Jansen's cases there were nine of choked discs, one of optic neuritis, and four of hyperæmia of the nerve-head, constituting 50 per cent of his cases. From this it would seem that the condition is found more frequently in the uncomplicated than in the complicated cases.



No. 1.

While the intra-ocular complication is more frequently hyperæmia of the nerve-head, or a low grade neuritis, typical and well-marked choked discs are occasionally found; and it is to the clinical study of a case of this character to which I invite your attention this evening.

The patient was a male, aged 12 years. Between two and three years before the aural trouble presented itself he had an attack of scarlet fever, so mild that the rash was thought to have been due to irritation from his underclothing, and the true nature of the affection was not recognized until a sudden attack of uremic coma set in. From this he made a very excellent recovery under the treatment of the family physician, Dr. Geo. M. Wells. In February, 1897, there was a distinct attack of diphtheria with earache, but unattended with any discharge. From this time on, however, there were recurrent paroxysms of earache, and on the 1st of June, after an unusually severe attack, a few drops of pus escaped from the left ear and an abcess formed over the mastoid of the same side, which was evacuated through a small incision by Dr. Wells, the patient apparently recovering from the local condition. He was so much prostrated, however, that he remained in bed and rapidly lost flesh, his belly becoming markedly scaphoid and each rib projecting. During this attack (June, 1897), the left side of the face became paralyzed, but at the time of the examination the paralysis was not complete as he was able to close his eyelids.

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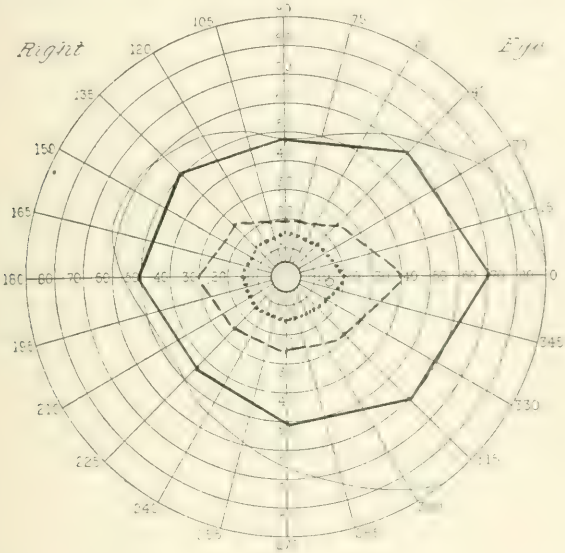
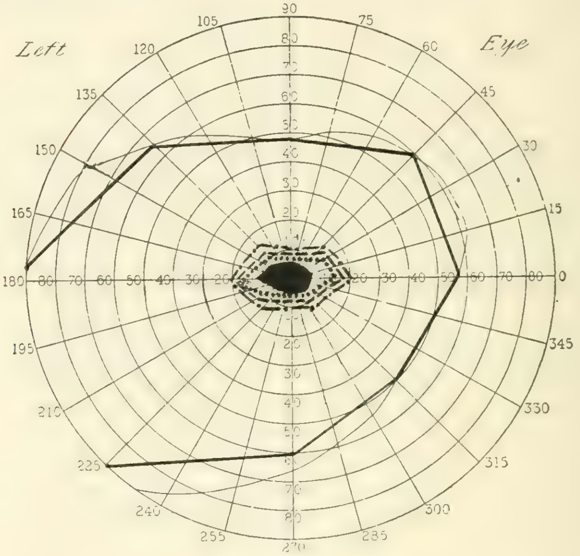
[1] Quoted from Whiting *Arch. of Otology*, Vol. XXVII, No. 6, 1898.



No. 2.

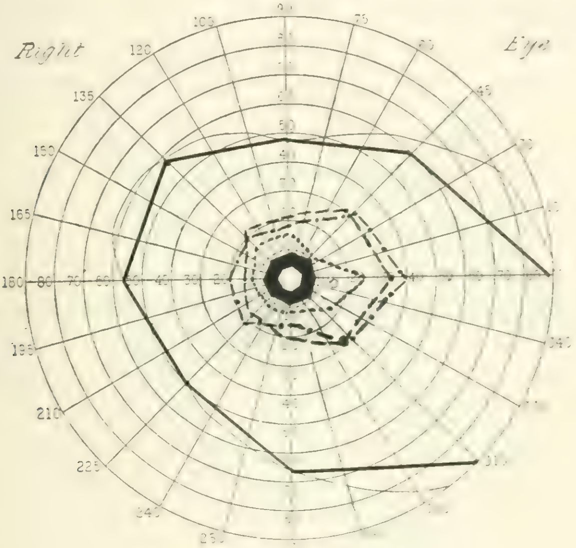
On June 18th, he was taken with severe frontal headache and repeated vomiting. The latter was not clearly cerebral in type, as it seemed, to a certain extent, to be connected with the ingestion of food. There was no retraction of the head, no mastoid symptom, and the temperature was but little elevated.

On the 20th, Drs. James Hendrie Lloyd and W. W. Keen were called into consultation. The boy was greatly emaciated, lying in bed in a darkened room as he suffered considerable from the light, and complained of excruciating headache. There was no visible ophthalmoplegia and the pupils reacted promptly. Over the left mastoid, and the left jugular below the mastoid, there was very slight tenderness on pressure. The pulse was 56, and irregular. In view of the conditions present it was thought that he might be suffering from an otitic cerebral abscess, or from lateral sinus disease, this opinion having been given by Dr. Lloyd at the time of his first examination and afterward confirmed by Dr. Keen, and immediate opening of the mastoid was advised.



No. 3.

On June 21st, the operation was performed. The moment that the usual incision was made back of the auricle a few drops of pus escaped with the blood, although the skin was not red. On pressing with the blunt end of an Allis dissector the bone was so soft that it was penetrated with little effort. The bone was then gouged away in the supra-meatal triangle and in a few moments pus was found in the spongy tissue. Following this indication an opening was made nearly to the apex of the bone, and then upward and backward, the interstices being filled with pus, showing it had permeated the entire spongy tissue. No distinct mastoid antrum was found. As the lateral sinus was exposed a considerable gush of pus occurred. Upon inspection a part of the wall of this sinus was found to be distinctly gangrenous and when it was touched with a pair of forceps it fell readily. From the inside of the sinus, nearly back to the torcular Herophili, a considerable amount of half-decomposed clot was curetted, but without any noticeable odor. Toward the apex of the mastoid there was also a considerable quantity of pus burrowing down toward the neck. An opening was made into the middle ear and the whole well syringed out and packed with iodoform gauze, no sutures being taken.



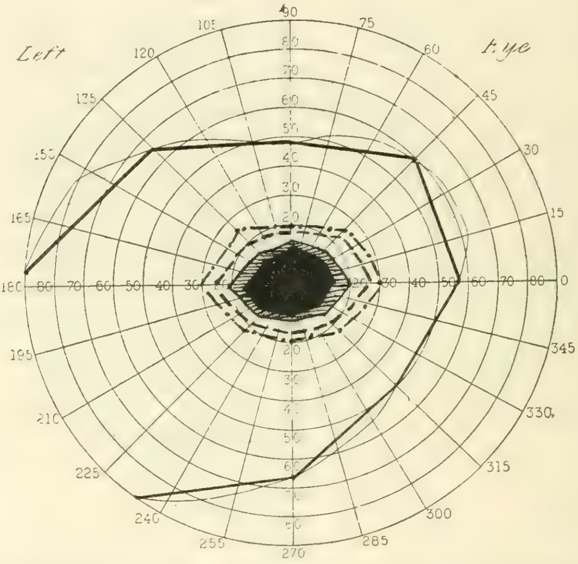
No. 4.

While there was a large clot it is to be noted that there were no septic symptoms. Culture tubes were inoculated from three points and sent to Dr. D. B. Kyle, who afterward reported that there was no growth in any of them.

The surgical progress was uninterrupted. By the third day after the operation the temperature had fallen to 98.8° in the morning, and though he had a slight fluctuation it was, on the whole, almost normal thereafter. It was quite curious, however, that he remained exceedingly thin, and though his appetite slowly improved, it was far from normal. On the 19th of July he was sent to the seashore with a view to building up his general health, which in a short time, under the change, assumed a normal condition. He is now a large, robust, healthy-looking boy, the general appearance giving no indication whatever of the severe illness through which he passed.

On the morning of the day upon which the operation was performed, being the third day from the beginning of the intra-cranial symptoms, the first examination of the ocular conditions was made.

The pupils were equal in size and reacted promptly to light, convergence and accommodation. There was no visible impairment of the movements of the external ocular muscles and the fields of vision for form were normal. Central vision equaled 5/5 in each eye and accommodation was prompt.

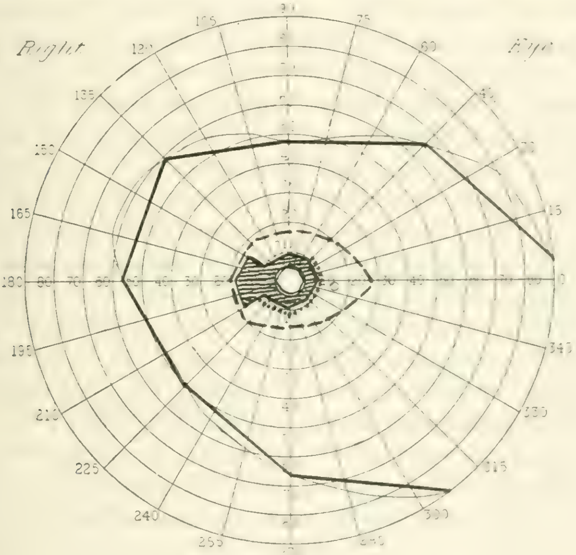


No. 5.

The ophthalmic examination of the right eye showed clear media, an oval and rather red disc with the edges everywhere veiled, full but not tortuous veins, and arteries somewhat smaller than normal. In the left eye the conditions were practically similar except that the veins were not quite so full. The opinion was expressed that the condition was probably a beginning optic neuritis.

The operation described above was performed a few hours after the examination was made and twenty-four hours later there was distinct swelling of each disc, considerable fullness, and tortuosity of the retinal veins, but without hemorrhages. The disc of the right eye was best studied with a +3.D lens and that of the left eye with a +2.D lens. Two days later a few hemorrhages had appeared on the surface of each disc, the swelling of which had increased, the right now being best seen with a +4.D lens. the left with a +3.50D lens. The central vision and the fields for form and color were still normal. In another twenty-four hours the swelling of the discs had reached the highest points, for the right eye being +6.D, and for the left being +4.D.

One week after the operation had been performed there was observed a slight weakness of the accommodation and of the external rectus muscle in the right eye. On the following day the accommodation of the left eye had also become slightly impaired. Twenty-four hours later there was complete paralysis of accommodation in each eye and paresis of the right external rectus producing diplopia, and requiring a seventeen degree prism to correct.



No. 6.

On the 13th of July, or two weeks after the appearance of the paresis, the accommodation of the right eye became nearly normal, and the paresis of the external rectus had almost disappeared. It was impossible to form any opinion concerning the accommodation in the left eye, as there was now a large central scotoma for red and green, extending nearly seven degrees from the fixation point in all directions. On each disc there was considerable exudate, the vessels being entirely hidden in places, and the vision of the right eye was 6/30 M, and for the left 6/60 M.

Six weeks after the operation had been performed the edema of the nerves had so subsided that the right was best studied with a+2.50D lens, and the left with a+2.D lens, the quantity of exudate, however, being but little changed in appearance. There was a small central absolute scotoma in the left eye extending about six degrees from the fixation point in all directions, and the fields for red and green were considerably contracted in both eyes, the form fields remaining normal. (Fig. No. 1 and 2) L—R. Vision of the right eye equaled 6/6 M, and of the left 2/100 M eccentrically. Accommodation in the right eye was normal.

The patient had been taking during the stage of edema small doses of bichloride of mercury, and considerable doses of potassium iodide, and was now placed upon strychnia. This he continued to use more or less irregularly for two months, when his vision was for the right eye 5/9 M. and for the left 5/100 ec. The swelling of the nerve-heads and the exudate had now almost disappeared; the hemorrhages had all been absorbed and the nerves were growing quite pale, especially in the temporal halves. The fields of vision at this time are presented in the second diagrams (Fig. 3 and 4). The fields for form are practically normal, those for color being markedly contracted, in the right eye there being a partial reversal of the blue and red fields. In the left eye there is an absolute central scotoma extending about four degrees above and below, five degrees to the nasal, and fourteen degrees to the temporal side of the fixation point. In the right eye there is an absolute annular scotoma completely surrounding the fixation point, about six degrees in width.

Inasmuch as the color fields now began to contract more rapidly and the scotomata to enlarge to a greater extent than the above fields show, he was given daily hypodermatic injections of strychnia in the temples for a period of seven weeks. At the expiration of this time the vision of the right eye equaled 6/6 slowly, and the vision of the left eye equaled 6/100 M ec, the annular scotoma of the right eye having become relative, the central scotoma of the left eye having become somewhat larger and remaining absolute. The patient was now given at different times thorough courses of nitro-glycerin, inhalations of amyl nitrite, phosphorus, etc.; and though the use of galvanism had been recommended some months before, the advice was not accepted until one year after the neuritis had subsided, when it was employed for some months without any appreciable benefit.

The fields shown in the third diagrams (Fig. 5 and 6) are those taken in January of this year, twenty months after the beginning of the neuritis. In the right eye the color fields are much more contracted and the scotoma has extended somewhat on the nasal side, now being key-hole shaped. The vision for this eye is 6/7.5 slowly. In the left eye the fields for color are larger than in the first charts, but the size of the scotoma has increased, there being a narrow relative zone, for both white and color, surrounding the absolute area, the whole extending about 15 degrees above and below, and 20 degrees to each side. The green field is lost. Vision equals 4/100 M ec. These fields and visual acuity represent practically the conditions as they exist to-day and as they have existed for almost a year.

The case presents many points of interest, among which are the following:

1. An otitic facial paralysis that rapidly disappeared after the operation.

2. The optic neuritis appeared unusually early after the beginning of the cerebral symptoms, and was more intense on the side opposite to the lesion.

3. The appearance of the sinus thrombosis with acute purulent disease of the middle ear.

4. The progressiveness of the neuritis after the operation had been performed. In a case reported by Kipp, and another by Wilbrand, the neuritis rapidly subsided from the time of the operation, but in the above case, though the nerve heads were but slightly swollen on the day of the operation, making a positive diagnosis of optic neuritis impossible until the following day, the swelling markedly increased until typical choked discs were present, with an enormous amount of exudate. The highest points of swelling of the nerve heads were reached in about a week, but fresh exudate and hemorrhage continued to be formed for nearly a month after the operation had been performed. I believe that a similar condition of progressiveness of the neuritis, if I may so express myself, is occasionally seen after operations for brain tumor.

5. The character of the scotomata.—Early in the progress of the disease they were absolute, being central in one eye and annular in the other. As the neuritis subsided, the central increased in size and remained absolute, and the annular increased in size and became relative.

6. The case shows the great importance of making an ophthalmoscopic study of all cases of middle ear disease in which there is the least suspicion of intra-cranial extension. To quote Pooley again, if the disease remains limited to the middle ear and mastoid, there will be no intra-ocular complication, so that if the latter be found it is certain evidence that the disease has extended to the cranial cavity.

I wish to acknowledge my indebtedness to Dr. Keen for his courtesy in furnishing me with his surgical notes of the case.

Note.—Some months after the treatment of the optic atrophy had been begun, it was observed that the patient was becoming quite deaf, but little impairment of the hearing having been previously noticed. Examination showed the vault filled with adenoids, and he was referred to Dr. W. J. Freeman for their removal, after which hearing was as good as ever.

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* For a complete resume of the symptoms, course and treatment of Sinus Thrombosis the reader is referred to the admirable monograph of Whiting in the *Archives of Otology*, vol. xxvii. No. 6, 1898.

A Death Following a Sty.—H. Guth (*Prager medizinische Wochenschrift*, No. 3, 1898; *St. Paul Medical Journal*, May, 1899) says that a woman was brought into the clinic with both lids greatly swollen, the conjunctiva chemotic, both eyeballs protruding, high fever, Cheyne-Stokes breathing, tonic and clonic spasms. Ophthalmoscopic examination showed septic retinitis; death followed; post-mortem showed that there was suppurative meningitis which had proceeded through infection from a hordeolum; the suppuration had infiltrated the orbital tissues and penetrated through the right cavernous sinus to the meninges.—(*N. Y. Medical Journal.*)

Physiologic Colored Rings Observed Around Flames.—L. Demicheri calls attention to certain colored rings observed around a small bright flame suddenly lighted in a dark room. The colors are reversed from the order noted in Newton's refraction rings, as the red is outermost, with yellow, green, and sometimes a violet ring toward the center. He considers them a phenomenon due to diffraction. They also occur with the crystalline lens taken from lambs, cows, and fishes, and are easily studied with an electric light painted black except for a small circle.—*Anales de Oftalmologia*, April.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JUNE, 1899. No. 6. NEW SERIES

EDITORIALS.

SHOULD SPECIALISTS EVER PAY FOR CASES REFERRED TO THEM?

I was somewhat horrified at the apparently ominous silence which greeted Dr. Black's letter on paying physicians who send us cases.

My only reason for not writing a protest at once was that I thought the RECORD would be so overwhelmed with letters on the subject that it would not be possible to publish them all. No doubt many others were prevented from writing by the same reason. I hope so, for if their silence means consent to the principle laid down by Dr. Black, our specialty must be in a bad way. Dr. Black says that while he does not believe in paying a stipulated fee for every case referred by a physician, he believes it to be our duty to pay a reasonable amount for those cases in which the physician has spent considerable time in getting them to come to us, or where he has rendered services for which he does not like to send the patient a bill. This may not be pure commercialism, but it certainly opens wide the door to it. Dr. Black puts the proposition in this way: Doctor, you have done a good deal for this patient, and have been to considerable trouble to get him to come to me, and since you can't charge him for it, I will pay you myself. But how easy the transition to the corollary which, though unexpressed, is inevitably implied: "And the harder you work for me in the future, the more I shall feel it my duty to pay you." And in deciding whether to send his patients to A or B, how hard it will be for the physician not to decide that, "after all, A is the safer man," if A is the one who gives the more liberal interpretation of the value of his services in securing the patient. Should this principle of Dr. Black's be accepted, it will be a break in the levee which will surely lead to a flood of corruption.

When a physician sends a patient to a specialist, he does not do so as a favor to the latter, but to serve the best interests of his patient; and if he does not like to send the patient a bill for any services which he may have rendered, he certainly ought not to expect the specialist to obtain the money for him under false pretenses; for that is what it would amount to under Dr. Black's principle, since, in the long run, the specialist's charge would surely be gauged with reference to the amount to be paid over to the physician. The proper way to meet this difficulty is to say to the physician: "Charge the patient whatever your services are worth, and if you prefer, I will collect it for you; will even take it out of my fee if necessary, but the patient must know where his money goes."

The ethics of this question are so plain that I fear I am insulting the moral sense of the RECORD's readers by discussing it at such length; but Dr. Black's sincerity and candor are so evident that I do not like to see his letter go unanswered. He has my sincere sympathy, too, in his desire to do something to get even with the men who do so much for us. From the bottom of my heart I wish that there were some honest way to give them a reward more substantial than words for their unselfish devotion to the interests of their patients, and, incidentally, of ourselves; but the moment a money consideration is permitted, corruption is sure to follow. The only honorable requital that we can give them is to treat all of their patients, poor and rich alike, with our utmost skill, courtesy, and consideration.

H. G.

CYCLOPLEGIA IN THE REFRACTION ROOM.

A certain number of gentlemen who are connected with the New York Post-Graduate School have taken occasion at different times to set forth in the New York *Post-Graduate Journal** their views upon the uselessness of having the accommodative effort suspended for a proper determination of an error of refraction. What possible object these gentlemen have in maintaining this position we are at a loss to understand. If they alone were to practice ophthalmology without using cycloplegics in their refraction work it might not be far-reaching, but when students beginning their ophthalmological career are taught that an error of refraction can be determined as accurately without cycloplegia as with it, then it does become far-reaching, and probably accounts for some of the woefully poor work performed by some of them. If this were all, still it would not be so bad, *but the army of opticians not permitted to use cycloplegics, who are ever ready to find some excuse for not doing so, cite these eminent authorities, and claim equal ability with the ophthalmologist in the determination of errors of refraction.*

If this doctrine emanated from a less prominent institution of learning it would not command our attention, but coming as it does from so prominent an educator, we are compelled to say in plain terms what we think about it. We have known for some time past that Dr. Roosa did not believe cycloplegia at all necessary except "in very rare and exceptional cases."† We hoped he would not be able to influence his subordinates to adopt his way of thinking. We infer from the utterances of some of these gentlemen that cycloplegia in the refraction room is infrequently resorted to in New York. If this is so, we extend our sympathies to their patients. We do not propose to analyze their reasons for dispensing with cycloplegia in refraction work. This, from our standpoint, would be impossible. We are at a complete loss to understand it. If New York is right, then the rest of the world must be wrong. What a frightful state of ignorance! Fortunately Dr. Roosa and his staff at the Post-Graduate do not represent all of New York, and it is to be hoped that all of the New York ophthalmologists are not so misguided.

We shall not attempt to defend the position that cycloplegia holds. It needs no defense. If accurate work is to be performed, the position of cycloplegia is established as a positive necessity in the refraction room.

M. B.

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* *The Post-Graduate*, Vol. XII. No. 12. Vol XIV, No. 11.

† *Medical Record*, New York, March 26, 1892.

Readers of the Record who intend visiting London for the purpose of attending the *International Otological Congress*, or Utrecht for the *International Congress of Ophthalmology*, or Portsmouth for the meeting of the *British Medical Association*, should not fail to correspond with Dr. George F. Keiper, Lafayette, Indiana, who is engaged in making up a party to visit those meetings.

REPORTS OF SOCIETIES.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held April 11, 1899.

The President, Dr. Lyman Ware, occupied the Chair.

Dr. Charles H. Beard showed a case of *Vorticose Veins,* which presented remarkable features—first, owing to lack of choroidal and retinal pigment and thinness of the chorio-capillaries, the venæ voticosæ of both eyes are clearly visible; and second, because of the number of these vorticose veins. Most works on Ophthalmology, in describing the anatomy of the globe, state that these venous trunks are four in number. Some of the more recent authors modify this by the remark that there are *probably more.* In dissections of the eyeball Dr. Beard has more than once counted as many as seven. In each eye of this case, exactly nine such vortices can be clearly seen with the ophthalmoscope. There is absence of pigment in the fundi, notwithstanding the fact that the iridis, hair and skin are rich in that substance, so that all the choroidal vessels, veins and arteries are in plain view.

Dr. William H. Wilder showed under the microscope section of *Epithelial Cyst of the Conjunctiva,* taken from the case shown at March meeting of the Society. The cyst evidently developed from the glands of Krause in the fornix of the conjunctiva. One peculiarity about the specimen is that the cyst is lined by a double row of epithelial cells. The walls of the cyst are quite vascular, as is shown fairly well in these pictures. The cyst was removed with considerable difficulty; it proved to be much more extensive than was at first thought, for it extended under the orbit a considerable distance back of the caruncle, so that a good deal of dissection was necessary before it was entirely removed. Soon after the beginning of the operation it ruptured, and this added somewhat to the difficulty.

Dr. W. F. Coleman presented a case of *Sarcoma of the Tarsus,* in a patient aged 22, with a mottled red wash-leather appearance of the palpebral conjunctiva over the upper tarsal cartilage, which is considerably thickened in its whole extent. The weight of the lid causes ptosis. Under chloroform the whole tarsus, except the ciliary border, was excised. The wound healed kindly, and no ptosis remains. Professor Klebs examined the specimen and pronounced it to be sarcoma.

Dr. W. F. Coleman made a further report on a case of *Sympathetic Serous Iritis Following Mules' Operation* reported at a previous meeting of the society.

Six weeks after the operation the glass ball was exposed by the giving way of a suture. The wound was freshened and sutured, but five days later nearly the whole glass ball was exposed.

Two nights later the patient was awakened by a severe pain in the right eye, followed in two days by the formation of posterior synechiae below and dotted opacities in the outer 3/4 of the area of the cornea. V.=6/12. No opacities in the vitreous. The fundus and disc look cloudy, though the edge of the latter is well defined, and surface not striated, the cloudiness being attributed to the cornea. Calomel, grain 1/10 every hour, atropine, moderately hot compresses and occasional cupping were given.

At end of a month, V.=20/30. No conjunctival or ciliary injection. The motion of the glass eye is now up and down, and in only 12 degrees, and motionless outward. The patient says the vision of the right eye has been cloudy since the last injury to the left eye, but especially cloudy after the operation, since when there has been a blur or dancing shadow before the right eye up to three weeks ago, when vision became clear. A week after the operation the sight was so bad he could not, one day, recognize a friend beside him. Next day pain set in in the right eye, and recurred nightly from 3 to 4 A. M. for three weeks, and was relieved promptly and completely by hot compresses.

April 8th. Vision under homatropine=20/30 or 6/9 with —1.25. Some slight opaque dots in the cornea and at the lower edge of the pupil. Eye quiet and fundus clear.

The Committee of the *Ophthalmological Society of the United Kingdom*, appointed in March, 1896 (see *Annals of Ophthalmology* for January, 1899), reports: "We have not found a record of any case of sympathetic ophthalmitis following evisceration without the insertion of an artificial globe." The Committee adds: "We have collected records of five cases of ophthalmitis after the operation of evisceration, and the introduction of an artificial globe into the emptied sclerotic. (Mules' operation.)" In this case, since the injured eye remained quiet up to the time of operation, and gave rise to no sympathetic inflammation, and since evisceration, *per se*, is scarcely known to be followed by inflammation, and serous iritis is so common a type of sympathetic disease, we are forced to conclude that the result in this case was due to the insertion of the artificial globe.

When this case was previously discussed, Dr. Wood remarked: "Since the main object of removal of the eyeball is to avoid sympathy of the fellow eye, it is inadvisable to risk the insertion of a glass ball."

Discussion.—Dr. Thomas Faith recalled seeing Dr. Bettman try Mules' operation in the Infirmary. He placed spheres in the cavity and closed them up with tobacco-pouch sutures. In two cases particularly they were extruded in a short time, and in one instance he had trouble with the other eye, requiring enucleation some time afterward on account of an irido-cyclitis, but there was some doubt in his mind as to the cause of the latter trouble. In fact, in this case the sphere had to be removed on account of the severe orbital cellulitis for the relief of the pain.

Dr. William H. Wilder never eviscerates an eye where the lesion has existed for some time, for fear there may be some focus of infection either in Tenon's capsule or in some of the lymph sheaths; and he only eviscerates immediately after an injury has been received; then the insertion of a glass ball might be practiced with possibly a reasonable degree of safety. He feels that it is positively the duty of the surgeon to take no chances whatever, when the ultimate result to be gained is merely a cosmetic one. He does not think the question of cosmetics should weigh anything at all, as against the possible danger to the other eye.

Dr. K. K. Wheelock. With reference to evisceration, some years ago Dr. Wheelock did this operation and had a good deal of trouble. There was considerable reaction, and the wound was a long time in healing. He believes some cosmetic results can be obtained from evisceration that cannot be secured from enucleation, but in a laboring man, where the question of time is of great value, he thinks enucleation should be preferred. He would like to know whether the reaction is very much following evisceratlon. He has not practiced it of late, but has been tempted to do so a few times. In laboring men he has hesitated on account of possible delay in healing of the wound.

Dr. Ware's experience has been that in evisceration there is a great deal more reaction, and the wound takes a longer time to heal.

Dr. Montgomery has done evisceration in a certain class of cases for at least ten years; he has had cellulitis in two or three instances, but with those exceptions the stump has healed as quickly as after enucleation, without any decided reaction or unfavorable symptom, and his practice has been to leave the stump entirely open, not to introduce a suture at all.

Dr. Henry Gradle has performed half a dozen eviscerations without sutures. Healing of the wound took place at the end of two or three weeks. The reaction was more severe than after enucleation, but probably on account of the absence of sutures much less intense than is usually described. However, he could not satisfy himself in the long run of any advantage in evisceration, and has abandoned it completely.

Dr. Coleman (closing the discussion) has done a good many eviscerations in the last ten years, and so far as his experience goes, the patient could be dismissed from the hospital after an enucleation on an average of from three to four days. He took a hint from Dr. Prince, of Jacksonville, to swab the interior of the sclera with 95 per cent carbolic acid, a procedure which reduces the time the patient spends in the hospital. So far as healing goes, after the first week the wound progresses rapidly. He puts in a purse string suture, and the artificial eye can be inserted quite as early as after enucleation. He would prefer to do an evisceration in the presence of panophthalmitis rather than to cut open the optic sheath in doing an enucleation. After a year or more elapses, he thinks there is practically some difference in the size of the stump and in the mobility of the artificial eye.

Dr. Lyman Ware presented a case of *Synchysis Scintillans—Sparkling Synchysis.* Webster (*Archives of Ophthalmology*, Vol. 12, p. 179, Knapp's) states that in a total of over 45,000 eye cases only five cases were seen. It is generally believed to result from degenerative changes in the vitreous. In cases where the vitreous becomes detached from the retina, where there has been loss of vitreous as a result of cataract operation or traumatism; where there has been chronic irido-choroiditis or fatty degeneration of the vitreous, it is noted in some of the cases reported that there is a diminution of tension, and impairment of vision. In this case there is no diminution of tension, but there is considerable impairment of vision.

Mr. S. is now 65 years of age. About five years since he began to have trouble toward evening or twilight, (night blindness) which so much increased the last year that he seems to be in fog all the time. V. L. 20/40; R., 20/80. Visual field much contracted. Urine contains albumen and the microscope shows fatty casts. The ophthalmoscope shows a large number of cholesterine crystals in the vitreous, which have the appearance, whenever the eye moves, as of a shower of gold dust. There are also a number of atrophic retinal patches.

Discussion.—Dr. Wm. T. Montgomery saw a similar case about ten years ago in a woman sixty-five years of age. With the ophthalmoscope she had 3½ D. of hypermetropia; the vitreous was found to be full of those beautiful, gold-like scintillæ. As the patient rolled the eye up and down, it was like a shower of falling stars. On correcting the hypermetropia, vision was found to be almost normal.

Dr. Lyman Ware thinks the cholesterin crystals in the vitreous in this case to be due to fatty degeneration. This man has fatty degeneration of the kidneys.

Dr. K. K. Wheelock, of Fort Wayne, Ind., saw a case of synchysis scintillans in a man eighty years of age, it being associated with colloid degeneration.

Dr. Thomas Faith remembers seeing a case of synchysis scintillans in Dr. Wilder's clinic some three or four years ago at the Infirmary. The patient had no pathological condition of the fundus whatever, and all she complained of was presbyopia. The woman was eighty-four years of age, Norwegian, well preserved, and had this condition for a number of years but had never paid any attention to it. The same condition was present a year and a half ago; the little particles, like gold-dust, were very numerous and small, but there was no other pathologic condition. It is well known that we have in all nervous tissues these cholesterin bodies present, and why should they not be present between the choroid and retina, between the vitreous and retina, or in the vitreous?

Dr. Gradle presented a case of *embolism of the central artery* with preservation of some central vision. Mr. L., 42 years old, had severe rheumatism ten years ago. His heart sounds are not clear. Hitherto with normal sight, he became blind suddenly in the left eye sixteen days ago. His right eye is normal. The left eye can barely see fingers (not count them) in an area of about ten degrees, slightly temporal from the visual line. In correspondence with this amount of sight, there is still a minimal pupillary reaction. The ophthalmoscopic appearances are those of embolism, but with some uncommon peculiarities.

The papilla is slightly edematous. There is retinal edema in irregular spots between papilla and fovea. Around the fovea is the cherry-red spot, with a few glistening white specks above it (degeneration?). The veins are slightly narrowed, but uniformly filled. Out of the arteries,the superior and inferior temporal branches are distinctly narrowed, all the other branches merely threadlike. Yet all arteries are distinctly and continuously filled with blood, and are nowhere interrupted. Above the macular region there is an unusual vascularity, as four fine arterioles can be counted converging towards the retinal center. In this area are three minute fluffy hemorrhages. Below the macula, a fine arteriole is seen, of which a short length is distinctly and uniformly broadened, as if distended by a plug. The retinal area, which is still sensitive, does not differ ophthalmoscopically from the adjoining region.

There is probably either a macular arteriole arising from the central artery behind the embolus, or there exists a retino-ciliary communication. Consistent with this view is the existence of a macular arteriole, which, though very small, is about of ordinary size, and which can be followed from the center of the papilla towards the macular region.

Discussion.—Dr. K. K. Wheelock recently saw a case of partial embolism of one of the branches of the retinal artery with almost complete blindness. The patient recovered the eyesight in a few days under treatment. She was a very anemic, overworked, chlorotic young woman, and the movements of the embolic plug from branch to branch could be watched until finally it passed away almost completely with restoration of vision. The treatment consisted of absolute rest, massage and tonics.

Dr. William A. Fisher, read a paper on "*The Use of the Giant Magnet in Removing Foreign Bodies From the Interior of the Eye*," and gave a demonstration of its use in extracting pieces of steel from the eyes of rabbits.

Discussion. Dr. Henry Gradle in connection with Dr. Fisher's paper wished to cite the case of a young girl who had a chip of iron enter the sclero-corneal junction, penetrating through the lens. Dr. Gradle saw her a few hours after the injury with a large rent in the lens capsule, the external wound still open. He immediately made an iridectomy, extracted the lens, entered with a small magnet, but could not get the foreign body. Cyclitis set in. A few days later, partly for diagnostic purposes, and partly with the vain hope of accomplishing something, he placed her against the field-pole of ten horse-power motor, not differing very much in strength from this large magnet. She felt nothing. On bringing the eye in contact with it there was no visible change, but on enucleating a few days later the chip of iron was found displaced in such a way that he attributed its displacement to the application of the magnet. The foreign body was found in a position which it could not have reached by following a straight path or by sinking subsequently.

Dr. William H. Wilder: It seems like inflicting unnecessary injury upon the eye to draw a piece of steel forward, then around the lens, possibly injuring the posterior capsule, then through the suspensory ligament, making a rent in it, and then, in addition, running the risk of tearing the iris for the purpose of bringing the foreign body into the anterior chamber. He really cannot see the rationale of having the foreign body make such a wide excursion with imminent risk of wounding important structures of the eye, when it is positively demonstrated that it is in the vitreous chamber.

Dr. Fisher (closing the discussion): In regard to the statement of Dr. Wilder of wounding important structures in extracting a foreign body with this magnet, will say it is not necessary to use enough force to cause serious injury to any of the important ocular structures, particularly when we have a rheostat to regulate the current. Dr. Wilder spoke of drawing the foreign body through the posterior capsule. This should not be done unless the lens was already opaque. A foreign body cannot be drawn through the lens, but by using enough force to draw it through the zonula, one can see the iris bulge, then turning off the current, turning the magnet around, and coaxing the foreign body into the anterior chamber. In this way very little, or no damage is done. Of course, reasonable care must be exercised in doing this operation, and not enough force should be used to injure important structures of the eye.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting April 18, 1899. Dr. George C. Harlan, Chairman, in the chair.

A Note on Holocaine.—Dr. Wm. F. Norris said that it is well known that holocaine has found tolerably widespread acceptance as a local anesthetic for the cornea and conjunctival sac, and that claims have been made for it as an antiseptic and germicide. He has used it in a considerable number of cases in both hospital and private practice, and has been specially gratified by its effects on corneal ulcers. In several such cases which have for many weeks dragged along with slight progress and frequent relapses, great improvement has been manifested from the use of holocaine, as shown by rapid diminution of the infiltration area, and later by healing of the ulcer. The method of application has been by flushing the conjunctival sac with a 1 per cent solution, and by touching of the floor of the ulcer with a little cotton swab saturated with it. It has been a question in his mind whether holocaine was really a germicide or whether it simply afforded a medium which was unfavorable to the growth of microbes. He therefore called in Dr. D. H. Bergey, of the Laboratory of Hygiene of the University of Pennsylvania, who found that a 1 per cent solution of holocaine applied to staphylococcus colonies had no effect in one-half an hour, but killed all of these microbes in 2½ hours. A 1 to 1,000 solution of mercuric bichlorid has a nearly similar effect; for two hours after the application the staphylococci were still alive.

Discussion.—Dr. Friebis has been favorably impressed by the use of holocaine as an anesthetic in tenotomy, and considered its non-effect upon iris and ciliary muscle a decided point in its favor. In reply to a question of Dr. Oliver as to its action upon the corneal epithelium, Dr. Norris replied that the desquamation was inconsiderable. Dr. Hansell stated that he had used holocaine constantly for several weeks in a case of neuro-paralytic keratitis, with the gratifying results of relief to the severe pain, the reproduction of the corneal substance, and healing of the ulcer. Dr. de Schweinitz has used it in a case of hypopion-keratitis with decided advantage. In reference to the strengths that can be used, Dr. Oliver referred to the recent researches of Scrini on the so-called oily collyria, in which it was determined that pure holocaine can be mixed with oil in the strength of 3 per cent at a temperature of 80° C.; the author finding that the chief advantages of the plan being the increased power and the rapidity of action of the drug when placed in such a menstruum.

Dr. Wm. F. Norris exhibited a patient upon whom he had operated for *symblepharon*, by transplanting a piece of skin from behind the ear onto the raw surface of the eyeball. The transplant had healed without sloughing. The increase in rotation of the ball was marked.

Dr. Charles A. Oliver demonstrated a *New Method* (a modification of Frost's and Morton's plans) *for the Implantation of Glass Balls into the Orbital Cavity in Cases of Enucleation.* After freeing the conjunctiva from the globe at the corneal limbus and dissecting it back so as to expose the tendons of the four recti muscles, each of the lateral muscle tendons is secured by a long, continuous catgut suture, and freed from the eyeball. The vertical recti muscles are dealt with in the same way. Working in between the broad loops of catgut holding the ends of the muscles, the eyeball is enucleated without difficulty. The capsular cavity is thoroughly cleansed, and a glass ball which is water-tight and about three-fourths the size of the normal globe is placed in the situation previously occupied by the globe. The cut ends of the lateral recti are sutured together, followed by the vertical recti, thus enclosing the sphere within Tenon's capsule. The cut edges of the overlying conjunctiva are brought together by a series of silk threads, and the operative field is covered by a gauze protective bandage upon which iced compresses are placed. There is no reaction, and the socket is ready for the insertion of an artificial eye in a very brief time; in fact, earlier than after ordinary enucleation. The results are fully as good as those obtained by Mules' method. The operation is offered on trial for cases in which abscission, keratectomy, or evisceration with insertion of artificial vitreous is impracticable or impossible, thus affording opportunity of obtaining well-fitting and freely mobile artificial eyes.

Discussion.--Dr. Harlan called attention to the fact that Mr. Carter was in the habit of closing the wound in abscission of the cornea by suturing the muscles over it after freeing them from the ball. He also stated that Dr. Risley had shown him a case in which a Mules ball, inserted after enucleation, had dropped out of the muscle-cone. He thought that the largest-sized Mules ball was too small for this purpose. Dr. de Schweinitz had employed Suker's method of preparing a stump for an artificial eye, *i. e.*, the suturing together of the recti muscles with catgut and the conjunctiva with silk after complete enucleation, and had produced an excellent cosmetic effect, which, however, he felt sure would be temporary, owing to later shrinking of the tissues. Therefore, he thought Dr. Oliver's suggestion an admirable one.

Dr. P. N. K. Schwenk reported, by invitation, *Several Cases of Dislocation of the Eye-ball.* Traumatic dislocation may be *simple* or *compound.* In the former, the orbital tissues are stretched only, in the latter they are lacerated and the ball may have suffered injury, and in both the ball lies in front of the spasmodically closed lids. Case I. A child, blind from birth, while stooping ran a spear into the right orbit. Case II. A small terrier dog was run over by a heavy wagon, the wheel of which passed over his neck. The left eye was completely extruded. A canthotomy was done, when the ball jumped back into the orbit with a thud and the lid closed in front of the cornea. The eye made a complete recovery. Case III. A man in falling struck his face (probably the external orbital angle) against a table. The eye and its adnexa were badly bruised and torn, demanding enucleation.

Dr. Wm. Campbell Posey *Reported a Case of Complete Monocular Blindness from a Head-injury, Followed by a full Restoration of Vision.*— The case was that of a young man who had received a hard blow over his left eye by the occiput of his child's head while at play. The patient was quite stunned for fifteen minutes and suffered excruciating pain in his lest eye and temple. The skin was not broken, and there was no hemorrhage into the conjunctiva, or from the nose or mouth. Vision was unaffected until thirty-six hours after the accident, when a veil appeared to drop over the affected eye. Five days after the accident, the eye was totally blind, the pupil was stationary to light stimulus, the head of the optic nerve was pale, and the venous pulse showed marked alterations in rhythm. The patient was placed in bed and leeched, his bowels opened by salines, and free diaphoresis obtained by jaborandi. This was followed by mercurial inunctions and later by potassium iodide. After three days of this treatment there was light perception in the upper nasal field, and in three weeks vision returned to normal. The fields of vision which were obtained as soon as sufficient sight was regained to make this possible, were interesting, as they showed a small, absolute, central scotoma and a larger, paracentral, relative scotoma. The author attributed the lesion to a fracture through the orbit, probably through the roof of the sphenoid, rejecting the explanation offered by Nettleship in three somewhat similar cases of a hemorrhage into the sheath of the nerve.

Oculo-motor Paralysis from Typhoid Fever, with a Case.—Dr. de Schweinitz reported a case of complete right oculo-motor paralysis without involvement of the ciliary muscle, occurring in a man aged 22, during the relapsing period of a severe case of typhoid fever. Four months after the attack the ptosis had disappeared, but there was limitation of the upward, downward, and inward rotations, the inward movement being most limited. Dr. de Schweinitz briefly reviewed the literature of extra-ocular muscle palsies occurring as a complication of typhoid fever, and thought his case might be explained by a meningitis, or perhaps by an effect of the disease directly upon the oculo-motor nerve, producing a neuritis, precisely as it produces neuritis of other nerves in the body, notably those supplying the extremities.

Discussion.—Dr. C. A. Oliver asked if the case showed any albuminuria, as he was at present studying an excellent example of the nuclear type of relapsing oculo-motor palsy following chronic nephritis from typhoid fever in a young woman, that served as an illustration of Knies's belief of association of the two causal conditions. Dr. de Schweinitz replied that albuminuria was not a factor in his case.

Is there a "Hypermetropia Acquisita?"—Dr. B. A. Randall challenged the common view that there is a natural reduction in the refraction of the eye, and called for any competent evidence of it. That nearsight grows less annoying is generally ascribable to the narrow pupil of age: that farsight appears, which had been previously unnoted, is due to waning of the accommodation which had covered it. Flattening of the lens is as little proven as the popular idea that the cornea flattens: and the claim that the lens-layers become more homogeneous in refraction-index with age seems contrary to most of the known facts. The cases scientifically observed through the period from 55 to 80 must necessarily be few, and many will show increase of refraction from cataractous changes in the lens; unchanged refraction in a cited case in point might be plausibly but inconclusively ascribed to this, and in any showing decreased refraction proof that previous measurements were unimpeachable, will be virtually impossible. Mydriatics are rarely used in presbyopic eyes, and can fail as signally to abolish spasm in them as in younger eyes; accommodation is present, although its range is shortened, and Donders even represents a diopter as remaining at 80. The apparent confirmations of "H. acquisita" prove too much both in degree and rapidity of change, as in a case cited, where H=1.50 at 54, became H=3 at 68, just as may happen in a few months with young eyes. Old eyes, like young eyes, are generally hypermetropic, often in notable degree; but the assumption that they are emmetropic in the middle period of life lacks scientific basis.

Dr. C. A. Veasey reported a case of *Double Choked-Disks in a Quiet Otitic Thrombosis of the Sigmoid Sinus, without Pyemia.* The patient was a 12-year-old boy who had had an attack of diphtheria, mild in character, about four months before the appearance of the aural symptoms. At the time of the appearance of the latter there had been an unusually severe attack of earache with a mastoid abscess, from which he seemed to recover after evacuation by the attending physician. Two weeks later there was a facial paralysis of the same side, severe frontal headache, repeated vomiting, great emaciation, but no retraction of the head, no mastoid symptoms, and but slight elevation of temperature. The mastoid was opened by Dr. W. W. Keen and found filled with pus, and the wall of the lateral sinus gangrenous. The latter contained a half-decomposed clot extending nearly to the torcular Herophili. Recovery from the local condition was prompt. On the day of the operation, three days after the appearance of the cerebral symptoms, a very slight edema of the disks was found, which, although the operation had been performed, continued to increase in intensity until typical choked-disks, with an enormous amount of exudate and hemorrhages, were present. Later there appeared paralysis of the accommodation in each eye and paralysis of the right abducens. After several weeks these conditions subsided, and two years later there was a large, central, absolute scotoma in the left eye, with visual acuity of 6/100, and a narrow, annular, relative scotoma in the right eye, with visual acuity of 6/7.5.

Discussion.—Dr. Randall stated that such patients are in the earlier stages free from ophthalmic symptoms, and when they appear it is as frequently the side opposite to the lesion that is affected. Similar symptoms are found in pachymeningitis and disturbances of the dura mater. Dr. Harlan was reminded of the first choked-disk he ever saw, which occurred in a case of old middle-ear disease in a delicate young girl. As there was no other symptom than violent headache, the ophthalmoscope was used as a means of diagnosis between intracranial disease and pronounced hysteria. After death a cerebral abscess was found separated from the carious tympanic roof by sound brain tissue.

Dr. G. C. Harlan reminded the Section that he had shown, about a year ago, a pair of bifocals made by Borsch in which the reading part is formed of a circular lens 15 mm. in diameter, made of flint glass and sunk into the distant lens made of crown glass. The increased refraction of the small lens depends upon the higher index of flint glass, and its exposed surface is ground to the same surface as that of the larger lens. He has been in the habit of using these glasses in operating as well as in reading, and has found them entirely satisfactory. Recently Mr. Borsch has still further improved these lenses by burying the reading lens in the interior of the other so that it is practically invisible. The large glass is split into halves which are cemented together after the small one is inserted between them.

The glasses, which were exhibited, present no indication of their method of construction, which is a veritable puzzle to the uninitiated.

Discussion.—Dr. Thomson spoke in favor of the lenses, both from personal experience and that of his patients. He finds that the position and shape of the small lens allows one to walk, particularly up and down stairs, without difficulty.

HOWARD F. HANSELL.
Clerk of Section.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

PRIVATDOCENT OELLER, of Munich, and Privatdocent Baas, of Freiburg, i. B., have been appointed extraordinary professors.

DR. TSCHERNING has been made a Chevalier of the Legion of Honor.

DR. CLIFTON S. GRAY, a well-known oculist and aurist, died February 14th, 1899, at Little Rock, Ark. He was in his fiftieth year, and a native of Missouri.

DR. JUNGE, professor of ophthalmology in St. Petersburg, and one of the most prominent oculists in the Russian capital, died last year. He was a pupil of v. Graefe and Helmholtz, and a frequent contributor to ophthalmic literature.

The *French Ophthalmological Society* held its seventeenth annual meeting in Paris, May 1st. The subject for discussion was "La Suppression du Crystallin Transparent," introduced by Professor Pflüger, of Berlin.

THE Louisiana State Medical Society will hold its annual meeting in New Orleans on May 16th, 17th and 18th. Dr. E. W. Jones, of New Orleans, is chairman of the section on ophthalmology.

WE record the death of Dr. Jabez Hogg, of London. He was born in 1817, and died April 23d at his residence in Kensington. He was a well-known ophthalmological surgeon, and became a member of the Royal College of Surgeons in 1850.

AT a recent meeting of the executive committee of the Congress of American Physicians and Surgeons, Dr. W. H. Carmalt, of New Haven, Conn., was elected secretary. The next meeting of the Congress will be held in Washington, D. C., in May, 1900.

ALFRED GRAEFE is dead. His name is indelibly engraven on almost every page of ophthalmological literature, and the history of his life is synonymous with the history of ophthalmology.

We extend our sincere congratulations to Dr. E. Oliver Belt, of Washington, D. C. His is the latest defection from the Record bachelor staff. Dr. and Mrs. Belt will spend the summer in Europe.

Section on Ophthalmology.—American Medical Association. Contributors of papers will confer a favor by forwarding to the secretary, Dr. C. H. Williams, 15 Arlington Place, Boston, Mass., as early as possible, an abstract of their contributions so that satisfactory arrangements can be made for a discussion of the same.

A new addition to Ophthalmological literature is the *Postep Okulistyczny*, published monthly in Krakow, Poland, in the Polish language. It is edited by Professor Wicherkiewicz. The subscription price is about three dollars per year. The following well known oculists will act as collaborators : Drs. Joseph Talko, Kramsztyk, Mitvalsky, Machek, Strzeminski, Rumszewicz. The first number contains an interesting article by Dr. Talko, sen, on Septico-pyemia following abscess of upper lid.

Dr. Hermann Knapp delivered an address before the Medical and Chirurgical Faculty of the state of Maryland at their last meeting, held in Baltimore, April 25th. His subject was, "Some Landmarks in the History of Ophthalmology," and it is needless to say that he treated the subject in his usual masterly manner.

Washington (D. C.) Society of Ophthalmologists and Otologists.—Dr. Frank Hyatt read a paper on "Chronic Simple Glaucoma, Treated Without Operation," at the recent meeting of this society. The chief features of the case were the peculiar fields of vision and the improvement in sight under the treatment with eserin.

Bristol, England, Eye Dispensary.—The annual meeting of this institution was held on April 11th, under the presidency of Mr. P. J. Worsley. The report showed that 1,710 patients had been treated during the year, being upward of 100 more than in 1897. During the eighty-seven years' existence of this institution 141,000 patients have been treated. The financial statement showed that a small favorable balance remains.

West of England Eye Infirmary, Exeter.—The foundation stone of the new West of England Eye Infirmary was laid by Mr. Franklin on

April 11th after a short service by the Bishop of Crediton. This infirmary was founded in 1808, and was the second in the United Kindom devoted exclusively to diseases of the eye. In 1895 it was decided to entirely rebuild the institution, and property adjoining the infirmary was purchased for that purpose. The section now commenced will cost about £8,500, toward which £7,500 has been raised.

HEREDITY OF PTOSIS PALPEBRARUM.—M. Münden, of Hamburg, relates (*Deutsche Med. Woch.*, March 9) that in 1820 a woman was crossing the river in a boat when it upset, and in her struggle the eyelids were convulsively closed; rescued and revived, the lids were permanently affected with ptosis. Pregnant at the time, when she gave birth to the child it was also affected with permanent ptosis palpebrarum. This child grew up and bore three children, two normal and one with the same congenital ptosis. The latter is still living, and one of his children is also affected in the same way.

FOR "BLACK EYE."—Dr. May (*Medical Record*) gives the following hints as to the treatment of "black eye:" When the patient is seen early, before discoloration has set in, cold compresses or evaporating lotions are indicated; this will reduce the swelling and limit the subsequent discoloration. But if the patient is seen after he has a fully developed "black eye," hot compresses and massage are required. The affected portion is smeared over with vaseline and is rubbed for ten minutes several times a day. By frequent massage and continuous applications the discoloration may be almost entirely removed within twenty-four hours. The professional "black eye" artists use, for several hours, a poultice of the scrapings of a root, the nature of which they keep secret, but which the author thinks is bryony root, and he has used the latter with good effects.

GLASS EYE NO DIVORCE BASIS.—*Unique Cross Bill Is Set Aside by a Cincinnati Judge.*

CINCINNATI, May 3.—Judge Jelke granted a divorce and alimony to Catherine Kraus from Charles Kraus to-day. When Mrs. Kraus sued for divorce her husband's attorney filed an answer, setting forth that his wife had a glass eye and had deceived him until after their marriage. Judge Jelke held facial or other physical blemishes cannot be cited as proof of fraud in marriage contracts.

DR. D. B. ST. JOHN ROOSA, of New York City, has published another book, entitled, "Impaired Eye Sight, Its Improvement by Glasses." Dr.

Roosa has revised and enlarged the first edition of his book, which was formerly published under the name of "The Determination of the Necessity for Wearing Glasses." It is now intended to be a complete manual for the student and practitioner on this interesting subject. It contains six chapters and plenty of illustrations.

R. LEHMANN states (*Sem. Méd.*, November 2) that if the patient keeps his eyes completely or partially open during the chloroform narcosis, and opens them whenever you try to close them, you can expect some accident, more or less severe. This phenomenon was noted twenty-one times in three hundred and twenty-nine anesthesias, and in each one there was either continuous vomiting, arrested respiration, peculiarly protracted agitation, or asphyxia and syncope, requiring artificial respiration.

DR. JULIUS SAMELSOHN, of Cologne, died March 7, 1899, in his fifty-eighth year. He was a pupil of v. Graefe, eminently talented, very industrious, enterprising, and, scientifically, extraordinarily productive. He settled at Cologne in 1867; founded the Cologne Charitable Eye Hospital. Among his numerous publications we mention particularly one which is of paramount importance and will secure for him a permanent place not only in the history of ophthalmology, but also in that of general medicine, viz.: "On the Anatomy and Nosology of Retrobulbar Neuritis" (*Arch. f. Ophthal.*, xxxviii, 1, 1882.) It describes the author's discovery of the atrophy of the papillo-macular bundle in toxic amblyopia and other diseases.—*Archives of Ophthalmology.*

LOUIS DOR (Lyons) has been led by theoretic considerations, including the idea that sympathetic inflammation of the eye results from an altered composition of the intraocular fluids, to try the effect of the instillation into the conjunctival sac of an organic extract prepared by macerating the ciliary body of the eye of the ox. He reports the case of a man who was attacked with sympathetic ophthalmia one year before, and in whom removal of the exciting eye, and subsequent active treatment, including mercurial inunctions and injections, and iridectomy, had failed to prevent blindness, with pain and hyperæmia of the eyeball. The regular instillation of the extract of the ciliary body was followed by great improvement in all his symptoms, his improved vision allowing him once more to find his way alone. In another case of less severe sympathetic disease the improvement under the same treatment was equally noticeable.—*Medical Progress.*

SAUNDERS' MEDICAL HAND ATLASES.—We desire to say a good word for Haab's new "Atlas on the External Diseases of the Eye," edited by Dr. de Schweinitz of Philadelphia and published by Saunders. It contains seventy-six colored plates and six engravings, has 228 pages, is well indexed and sells for $3. The book is of convenient size, and is well and clearly printed on good paper. Each picture is accompanied by an extremely intelligible description of the disease, together with its pathology and treatment, given in a practical and up-to-date manner. The first part of the book is devoted to a general description of the examination of the eye in health and disease, including refraction, muscle tests, etc. The pictures are good. Some of them are perhaps a trifle lurid, but this is a fault that will be seen in all similar books. On the whole they are excellent, and cover a multitude of subjects. We cannot see how other atlases of external eye diseases can sell for eighteen or twenty dollars, when this little book can be secured for $3. We heartily recommend this book, not only to ophthalmologists, who desire it for their own use and for use in their clinics and lectures, but we also recommend it to the general practitioner, because its perusal and a careful observation of its excellent pictures, will enable him to much more readily diagnose ophthalmic diseases.

REMOVAL OF THE WRONG EYE.—This terrible blunder has been committed, according to the Montreal papers, by an ophthalmic surgeon of repute in that city, assistant oculist to the General Hospital, and oculist to the Western Hospital there. It is extremely difficult to understand how such a mistake could have been made, as the eye intended to have been excised was scarred by a large *leucoma adherens*, and was affected by general atrophy while the excised eye was, in all respects, normal. It seems that the globe had suffered a penetrating wound from a penknife some years before, and vision had been gradually and totally lost. It was deemed necessary, owing to threatened sympathetic disease, to remove the injured eye. The patient was anæsthetized, and although there were at least three physicians in the room nobody seemed to be aware of the accident until the operator examined more closely than he had done the excised eye that then lay in the palm of his hand. Old Moorfields men will remember how Mr. Tay (I think it was) always insisted upon marking the brow of *every* eye to be enucleated before the patient was chloroformed. That it has been possible for a surgeon, accustomed to do ophthalmic operations, to deliberately excise a perfectly normal eye in the presence of a second deeply scarred and easily recognized globe would seem to make this precaution less superfluous than it appears at first blush. At the same time, assuming the sanity and sobriety of the operator, it is difficult to believe such an awful occurrence possible except, perhaps, in a case where the eyes were, to external appearances, exactly alike.

WOMEN MEDICAL PRACTITIONERS IN GREAT BRITAIN.—The Ophthalmological Society of the United Kingdom has followed the example set by the British Medical Association in 1892, having, at a recent meeting, resolved to admit women to its membership. Moved by this solemn event, and in a spirit of true condescension and brotherly well-wishing, the *British Medical Journal* remarks: "This liberal policy cannot but have the best results. Women have now the same legal status in the profession of medicine as men, and it is just and wise that the right hand of fellowship should be held out to them. It is desirable, in the interests of the profession at large, that they should be brought under those good influences—intellectual, moral and social—which a well-organized society exercises over its members, and it is not less to be desired in the interests of the individual ladies that they may have every opportunity of making themselves acquainted with the observations and the opinions of the most active workers in the various departments, and of experiencing that useful stimulus to good work and high purpose fostered by learned societies, which have never failed to set up a high standard of professional attainment and professional honor." All of which will cause a smile to illumine the comely features of our own medical women, who have for so long profited by those good influences—intellectual, moral, and social—that they have probably forgotten, if they ever experienced, the time when cruel man refused to let them gather under that high standard of professional attainment and professional honor which learned societies have never failed to set up.—*New York Medical Record.*

GLAZED BOOK-PAPER BAD FOR THE EYES.—The effect of glazed papers on the eyesight has recently occupied the attention of some German doctors. One authority examines the causes of the changes in the general reading and writing habits of the nation, and explains that in the earlier part of the century the old rag papers then in use, both for writing and printing purposes, were mostly of a dull gray or blue color, and were coarse-grained, so that thick letters had to be used by writers with quill pens or by printers on their old slow presses. With the introduction of more modern fibres, paper received a smoother surface, steel pens could be employed, and the printing-paper could travel over quicker printing-presses. The fashion for brilliant colors and elaborate type-setting has been carried to such a state of perfection that a reflection is often created which could never arise from the rougher surface. Now, what is the effect upon the reader's eyes? In the old books or letters, with a mild and soothing light, the surface contrasted easily with the thicker and darker type or writing characters; now the highly-glazed surface offers reflections of the light, which, with the more elaborate and thinner type, produce a lot of shades and lights that are most trying. The paper has often to be turned in various directions to be seen more clearly, in order to distinguish the gray (or may be other shades) of the type from the shining white of the paper. This is similar in effect to the result in trying to decipher writing in the dusk. An experiment will soon prove this. Take an old edition, say of Shakespeare, and a new magazine on highly-glazed paper, and compare the sensation in the eye after half an hour's reading. The doctors therefore propose that the public inspectors of schools should order the use of sanitary paper for the eyes, by which they mean that a glazed or highly-polished surface should be avoided and the colors chosen should rather be gray or light blue, but no white, and, in fact no brilliant colors at all. The type should be clear and simple, but not too thin. The children whose eyes require protection, and through them the parents, should be taught to demand their favorite books and papers to be printed in the right style, and the excesses of a falsely-guided taste should be avoided. It is suggested that a few years of such policy would soon improve the eyesight.—*Invention.*

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JULY, 1899. No. 7. NEW SERIES.

ORIGINAL ARTICLES.

REPORT OF A CASE OF ACCIDENTAL INOCULATION OF THE EYEBALL WITH VACCINE VIRUS.*

BY S. POTTS EAGLETON, M.D.

Late Assistant Surgeon to Wills Eye Hospital, Philadelphia, Pa., Ophthalmic Surgeon to Marion County Surgical Hospital, Ocala, Fla.

On Friday, March 3, 1899, about 11 A.M., my friend Dr. W. V. Newsom of this city, while engaged in vaccinating the arm of a patient, forcibly broke one of the capillary tubes, containing the vaccine virus, receiving a portion of the broken tube with considerable force upon the right eyeball.

At first, little or nothing was thought of the accident, but on the Monday morning following, just three days afterward, he complained of headache (frontal) and pain radiating along the trigeminus nerve, with a general feeling of malaise and chilly sensations, associated with marked itching. In the afternoon the thermometer registered one degree of fever.

At 10 o'clock in the evening, a feeling as though a foreign body was lodged beneath the lid caused him to examine the eye, when a large conjunctival bleb was discovered.

The next morning (Tuesday) he consulted me at my office. On examination I found a bleb about the size of a small pea, situated beneath the conjunctiva, lying to the outer side and about 2 mm. from the limbus of the cornea, filled with a yellowish serum-like fluid: there were no other objective symptoms of inflammation, other than a tendency to lachryma-

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*Read before the meeting of the *Florida State Medical Association* held at Jacksonville, Fla., April 19, 20 and 21.

tion, due to the irritation produced by the bleb itself. I advised eviscerating the contents, which was accordingly done, in the lower and most dependent part of the bleb.

The after treatment consisted of the frequent use of a collyrium of boric-acid gr. x to f ʒ .i. while awaiting further developments.

Six hours after the operation, the temperature had fallen to three-fifths of a degree above normal. On Wednesday morning the fever was one-half of a degree.

With the exception of the sub-conjunctival hemorrhage, which always follows any operation upon the conjunctiva, all other symptoms had disappeared. The hemorrhage was absorbed in the usual time and the patient made an uninterrupted recovery.

Dr. Newsom was successfully vaccinated at eight years of age, a small scar marks the site of the inoculation.

During the last four months, while a mild epidemic of smallpox was prevailing throughout the State, he repeatedly vaccinated himself on an average twice a week, but was unsuccessful in every instance, the vaccination "not taking."

The case is one of unusual interest, not only on account of its rarity, but from the fact that since the advent of the capillary tubes, containing vaccine virus and the almost universal adoption of the same by the medical profession, such accidents in the future may become more frequent in occurrence.

It is evident in this case that the general immunity of the patient's system prevented serious trouble; had it been otherwise, and a complete vaccination resulted from the inoculation, it is probable that a general panophthalmitis would have resulted, with loss of the eye.

SEPTIC THROMBOSIS OF THE CAVERNOUS SINUSES.*

BY WILLIAM E. BRUNER, A.M., M.D.
CLEVELAND, OHIO.
Clinical Assistant in Ophthalmology Medical Department of Western Reserve University; Oculist to St. Vincent (Charity) Hospital, and Cleveland City Hospital.

Illustrated.

J. H., aged 40, was admitted to Charity Hospital, Sunday afternoon, December 11, 1898, because of pain and swelling about the right eye. The family history was negative. His father died of asthma, his mother at an old age from unknown cause. His two brothers and two sisters are living and in good health. He has had the ordinary diseases of child-

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*Read before the *Cleveland Medical Society*, April 28, 1899.

hood, and typhoid fever twenty years ago. Four years ago his skull was fractured by a pulley falling upon his head.

Five days before admission to the Hospital, because of toothache, which with some swelling of the jaw had troubled him several weeks, he visited one of the surgical clinics in the city. As I have since learned from the physician who attended him, an abscess was found near the alveolar border on the upper right side and opened, with the free evacuation of pus. The tooth was extracted and that too very easily, and he was told to rinse his mouth every hour with hot saline solution. Apparently the same day he began having pain in the right eye, with some swelling about it. Both symptoms rapidly increased. A physician of the neighborhood was summoned who administered morphin for relief of the pain, but all the symptoms continued to increase in severity until the fifth day when another physician was called in consultation. He immediately had the patient ordered to Charity Hospital. When I saw him there was marked proptosis of the right eye, the lids and all the surrounding tissues were enormously swollen, very tense, and dusky red in color. The edematous bulbar conjunctiva projected between the lids. The swelling was so intense and the tenderness so great that it was impossible to open the lids sufficiently to get any view at all of the cornea, or to ascertain whether he could see with that eye. The patient had not slept at all for several nights and was suffering greatly. He presented a general septic appearance and was sweating profusely. The temperature was 104 and the pulse 86.

Hoping that he had simply an orbital abscess we decided to operate at once. With the patient under ether, the lids could be opened so that a good view of the eye-ball was obtained. The cornea was perfectly clear and there was not the slightest indication of panophthalmitis. A free incision was made in the most prominent part of the upper lid, but no pus was found, though the incision within the orbit was freely enlarged by a full sweep of the knife. A similar one was made at the inner portion of the upper lid with the same result, and another one then through the lower lid along the border of the orbit, but beyond one or two drops of pus just as the knife entered, this incision was also negative. As a very free sweep was made, in all directions, with the point of the knife these incisions included practically the entire circumference of the orbit, so that I felt certain that there was little or no pus there, and it was evident that the trouble was deeper seated. Gauze strips were introduced into the incisions and moist bichlorid dressings applied. The following morning the temperature was 100, the pulse 70, and in the evening

$101\frac{2}{5}$, pulse 78. The patient was much more comfortable and the tissues about the eye were not so tense. Practically the only discharge from the wounds was a little bloody serum. The possibility of infection of the orbit through the antrum of Highmore from the alveolar abscess had been thought of, but there was absolutely nothing pointing to any difficulty there, nor was there a history of any tenderness, pain or swelling in that locality. Urinary examination showed acid reaction, specific gravity 1030, albumen present, but no sugar, and microscopical examination revealed hyaline casts and squamous epithelial cells. Examination of the pus from the incision in the lower lid showed large and small diplococci, the latter two or three times as numerous as the former. Capsules could be made out to the large ones, but not to the small ones. No streptococci nor staphylococci were found. Unfortunately cultures were not made.

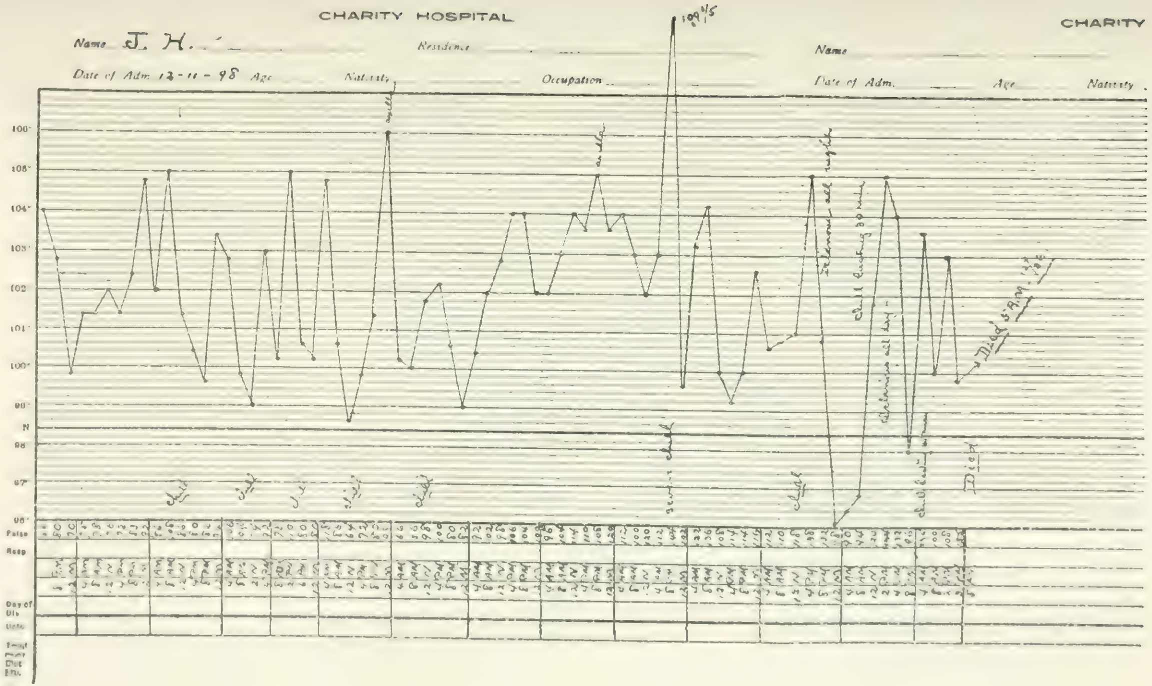
The evening of the second day the temperature went a little higher and about midnight he had a severe chill with temperature $104\frac{4}{5}$. This was followed by profuse perspiration and when I saw him the following morning temperature was 105, pulse 108, and there was a very slight degree of redness about the left eye with a slight amount of secretion from the conjunctiva. He now began having marked chills daily with profuse sweats and great variations in temperature. (See chart.)

The exhalations from the patient were so bad as to be very discernible the moment the room was entered, though disinfectants were freely used. All the symptoms of marked general sepsis were increased, but he continued to be perfectly rational.

December 15th. Edema of lids and bulbar conjunctiva of the left eye were very marked. There was a slight amount of very fetid pus, and now our fears of the past few days seemed confirmed beyond any doubt, that it was a case of thrombosis of the cavernous sinuses. This edema rapidly increased until by December 16th it was as marked about the left eye as it had been about the right at the time of his admission to the hospital, and the eye could no longer be opened.

December 17th. The photograph herewith presented was taken this morning.

It scarcely shows the amount of swelling, which was not limited merely to the lids themselves, but extended to all the surrounding tissues. The right lids are now much less tense and can be opened more readily, while the left are considerably more tense. The patient's mind remains perfectly clear. He is totally blind even to the perception of light. The pupils are dilated and do not respond to light. The ophthalmoscope


CHARITY HOSPITAL
CHARITY
Name J. H.
Residence
Name
Date of Adm. 12-11-98
Age
Nativity
Occupation
Date of Adm.
Age
Nativity
109 4/5
109°
108°
104°
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102°
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N
98°
97°
96°
Pulse
Resp
Day of Dis.
Urin.
Chill
Chill
Delirious all night
Chill lasting 30 min
Delirious all day
Died 5 A.M.
Died

shows in O. D. media clear, the arteries small, the veins dilated and tortuous, the edges of the disc hidden, in fact a slight papillitis and several hemorrhages. O. S. The arteries are small, the veins slightly tortuous, but not much dilated, the edges of the disc hazy, but the disc itself not swollen. Mention should be made of the fact that at no time has there been an edema of either side of the face, as sometimes happens from obstruction of the facial vein, nor any edema over the mastoid processes.

December 19th. The patient complains of pain at base of right lung and over the liver. Friction rub can be detected. Oscultation of heart reveals a rather rough systolic sound over the apex.

December 20th. A small opening with pus exuding from it formed at the inner portion of the left upper lid. Into this opening a probe could be introduced almost an inch. The swelling about the left eye is not so tense, and the lids can now be much more readily opened. The pain in the side continues. Diarrhea develops, for which he was given some bismuth salicylate with temporary benefit. He is now bathed almost constantly in copious sweats.

December 21st. Had an unusually severe chill this evening with temperature at 8 P. M. reaching 109$\frac{3}{5}$ pulse 144. This rapidly fell, and next morning at 4 A. M. was only 99$\frac{2}{5}$. During this time the patient showed symptoms of collapse, but rallied under stimulants. The small opening in the left upper lid was enlarged. From it and from the incisions of the right eye a small amount of very fetid pus could be obtained at each dressing, and after being thoroughly syringed with bichlorid they were again packed with iodoform gauze. The tissues about the left eye are less tense, and especially marked is the change about the right eye in this respect. Both eyes can now be easily opened. The diarrhea is again worse.

December 22d. Ophthalmoscopic examination. O. D. The pupil is semi-dilated and responds very faintly or not at all to light. Light perception is exceedingly doubtful. The media are clear, the disc is round, decidedly pale with physiological cup. Both arteries and veins are contracted and the latter slightly tortuous. The edges of the disc now are not hidden but hazy, the whole retina is pale and slightly edematous-looking. No hemorrhages are present. O. S. The pupil is semi-dilated and does not respond to light. Light perception absent. Media clear, disc round, with physiological cup, edges hazy but not hidden, apparently no swelling of the disc, but it is rather pale, though not so much so as in the right eye. The veins are more dilated and more tortuous than in the other eye,

and at the outer portion of the disc extending on to the retina is a moderate-sized hemorrhage. The patient has been steadily losing strength.

Dec. 24th. He was delirious all night, but this morning is fairly rational. During the night there was a hemorrhage amounting to about three ounces from the incision in the lower lid of the right eye. He has not complained of pain in his chest for several days, but his respirations are more rapid, and oscultation reveals slight prolongation of expiration at base of right lung and a few moist rales. The discoloration of the right lid is now almost gone. The swelling is greatly diminished and the bulbar edema has entirely disappeared except the mass which still protrudes between the lids. There is not the slightest difficulty in opening the eye. In the left eye also the swelling is much less so that this can be easily opened, and the bulbar edema is entirely gone except the protruding mass. There is still considerable, though greatly diminished, discoloration of the lids and the veins are full, dark and tortuous. The odor about the patient has become even worse. The tongue which has been very heavily coated has gradually become thicker, so that he can scarcely protrude it. The swelling about the eyes continued to decrease still further until the morning of December 26th, when the patient died. Despite all our entreaties an autopsy was absolutely refused.

The most satisfactory article to which I have had access upon the subject of thrombosis of the cavernous sinus is in Macewens' *Diseases of the Brain and Spinal Cord* (page 245). He refers to the literature of the subject and states that Knapp was the first to clearly recognize this condition, reporting three cases in the *Archives für Ophthalmologie*, 1864, XIV, page 220. The cavernous sinus is, according to that authority, more rarely affected by thrombosis than any other of the large sinuses. Under the etiology he speaks of cases reported where the thrombosis arose from alveolo-dental periostitis following the extraction of a wisdom tooth, and Fuchs (*Text Book of Ophthalmology*, p. 585), also speaks of it arising from like cause. In more than half the cases, the thrombosis extends through the circular to the cavernous sinus of the other side so that the symptoms though unilateral at the start become bilateral. "The second eye is involved rapidly, only twenty-four hours may elapse between the initial stage and the full development of these appearances. Coincident with the development of the appearances in the second eye there may even be a subsidence of these in the eye first affected." This was strikingly so in my own case, and not only that, but even the symptoms about the second eye markedly decreased before the patient's death. As in my own case, "The orbital cellular tissue, especially along the course of the ophthalmic vein, is usually the site of purulent collections." A surprising feature of the case reported was the length of time that the patient lingered. Macewen speaks of the duration being very variable, from a few days to several months, but absolutely all prove fatal where the thrombosis is infective as in my patient. His description of the general symptoms tallies very closely with those of my case—the temperature with its great fluctuations, the rigors and profuse perspiration, the dry-coated tongue and heavy fetid breath, the diarrhea, and also in a certain proportion of cases the septic pleurisy and pneumonia.

514 New England Building.

THE PERCENTAGE OF COLOR BLINDNESS TO NORMAL COLOR VISION AS COMPUTED FROM 308,919 CASES.*

JOSEPH A. MULLEN, M.D.
HOUSTON, TEXAS.

It is with the object of arriving at a fixed ratio between normal and abnormal color vision that I present the following statistics for your consideration, and that of the profession at large also; and, like Dr. F. A. Packard, of Philadelphia, "I admit that statistics and figures can lie, but statistics and figures differ somewhat from the human being inasmuch as statistics and figures as they grow bigger lie less, human beings are likely to lie more; hence the greater the statistics are the more accurate they are."

These statistics have been gathered from the most officially reliable sources, and from persons whose sole object has been scientific investigation, or from bureaus whose purpose it was to examine men, the acceptance of whom depended upon normal color vision, as the latter was the desideratum sought. They have also been taken from the naval departments of England, France, Russia, Austria and the United States. Sweden, Denmark, China and Japan have likewise furnished statistics, non-naval, however, as the following tables show.

Table 1 contains 308,919 male examinations for color blindness, with 5,631 of this number rejected, making a per cent of 1.82, while the same table has examinations of 15,634 females, with only 16 rejections for color blindness, giving a percentage of .01.

Table 2 presents the per cent of color blindness in respect to nations. The United States has a per cent of 1.53, based upon 181,169 cases (men), with that of Russia, etc.

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* Read before the *Western Ophthalmologic and Oto-laryngologic Association*, New Orleans, Feb., 1899.

Table 3 is composed of the percentages of Daltonism as taken from the authorities quoted, ranging from 12.5 per cent to 1.82.

I consider the statistics of the United States as furnished to me by the naval authorities at Washington to be by far the most accurate of any of those given.

I wish to express many thanks for kindness and assistance to the following gentlemen: W. K. Van Reypen, Surgeon General U. S. Navy; Assistant Adjutant-General Arthur L. Wagner, Military Information Division, Navy Department; Late J. R. Tryon, Surgeon-General U. S. Navy, and also Richard Wainwright, Esq., Chief Intelligence Office, Navy Department, all of Washington, D. C.

TABLE I.

STATISTICS ON COLOR BLINDNESS.

Dates	Observer. Country and Dept.	Males	Females	REJECTED AS COLOR BLIND		PERCENTAGES	
				Men	Women	Men	Women
1880–1896, inclusive	Med. Ex'n. U. S. Navy	161,491	- -	2,077	—	1.28	- - -
1885–1890, inclusive	Med. Ex'n. U.S. Naval Ac.	495		8	- -	.16	- -
	Med. Ex'n. England Naval Ac.	3,400	- -	18	- -	.05	
	Med. Ex'n. England Naval Cl. & Ac.	1,500		2	- -	.13	- - -
1880	Com. of Opt. Society	14,846	- -	617	- - -	4.16	- - - -
1892–1896	Med. Ex'n., France, Young Rec.	19,356	-	20	-	.01	
	Fontenay, Denmark	4,000	- - -	155	- -	3.80	
	Holmgren, Sweden	32,165	- -	1,019		3.16	-
	Jeffries, America	19,183		802		4.12	
	Jeffries, America		14,764	-	11		007
1886–1897, inclusive	Med. Ex'n. Russian Navy	47,530	- -	787		2.65	-
1897	Austria N. S. Fiume	985		-			
	Dr. A. Field, China, Swatow	600		19	- -	3.16	
	Dr. A. Field, China, Swatow		600		1		.17
	S. U. S. N., Japan (soldiers)	1,200	-	29		2.41	
	S. U. S. N., Japan (men)	596		32	- - -	5.45	
	S. U. S. N., Japan, (2 regiments)	1,200	- -	41		3.40	-
	S. U. S. N., Japan (boys)	372		5	-	1.00	-
	S. U. S. N., Japan (girls)		270		4	.40	1.5
	Total	308,919	15,634	5,631	16	1.82	.01

TABLE II.

PERCENTAGE OF COLOR BLINDNESS ACCORDING TO NATIONALITY.

Country.	Total Examinations.		Total Rejected C. B.		Percentage.	
	Male.	Female.	Male.	Female.	Men.	Women.
United States	181,169	14,764	2,887	11	1.53	.0073
Russia	47,530		787		2.65	
Sweden	32,165		1,019		3.16	
England	19,476		637		3 2	
France	19,356		20		.01	
Denmark	4,000		155		3.80	
Japan	3,368	270	107	4	3.1	1.5
China	600	600	19	1	3.16	.17
Austria	985		------		----	
Total	308,919	15,634	5,631	16	1.82	.01

TABLE III.

PERCENTAGES OF COLOR BLINDNESS.

Authorities.	Males Per Cent.	Bibliography.
Prof. Seebeck Ger. upper class, 5 out of 40 boys	12.5	Color Vision, Jennings, 1896, p. 40
Prof. Prevost, Genoa	5.	Color Vision, Jennings, 1896, p. 40
Prof. Wilson, Edinburgh, 1 out of 17.7 persons	5.6	Color Vision, Jennings, 1896, p. 40
Prof. Favre, 1 out of 10.7 persons	9.33	Color Vision, Jennings, 1896, p. 40
Dr. Fontenay, Denmark, 165 out of 4,492 persons	3.45	Color Vision, Jennings, 1896, p. 43
Dr. J. E. Jennings, U. S.	4.00	Women, 25, Jennings, 1896, p. 40
Drs. Thompson and Weiland, 2,653 out of 71,994 persons	3.69	Norris & Oliver, Sys. Dis. of Eye, vol. 2, p.325
Drs. Thompson and Weiland, 14 out of 15,853 women	.88	Norris & Oliver, Sys. Dis. of Eye, vol. 2, p.325
Dr. de Schweinitz	3.00	Women. 20, de Schweinitz, Dis. of Eyes, 96, p. 487
Dr. Joseph A. Mullen, Houston, Texas, 5,613 out of 308,919 men	1.82	
Dr. Joseph A. Mullen, Houston, Texas, 15 out of 15,634 women	.009	

A CASE OF AMBLYOPIA DUE TO THE USE OF METHYL ALCOHOL.

BY H. MOULTON, B.S., M.D.,

FT. SMITH, ARK.

Illustrated.

The great rarity of clinical observations of this form of amblyopia justifies the present report. Knies mentions a case reported by Mengin, and Dr. Holden calls attention to cases reported recently by McCoy and Michael, and by Dr. Callan. (Arch. Oph. VXXVIII, p. 129.)

The writer's case was as follows:

On March 23, 1898, Mr. E. G. Sprague came to my office, stating that on Oct. 8, 1897, he, with thirty or forty other men in the Indian Territory, had drank wood alcohol, some of them drinking but little, but five of them, including himself, took more, perhaps something like half a pint each. All were very sick. Two men died within twenty-four hours. Two others recovered perfectly. The fifth, Mr. Sprague, became very weak, and his heart's action very feeble, but he was never unconscious. On the 9th, which was the next day after the drinking, his sight began to grow dim, and in a few hours was lost entirely. In a few days some sight returned, since when the condition has remained unchanged. The patient's age is 33 years. He is a native of the United States; a painter by trade, of fine physique and apparently in good health. He had never had any illness before, excepting painter's colic in 1885. I found the pupils dilated and irreponsive to light.

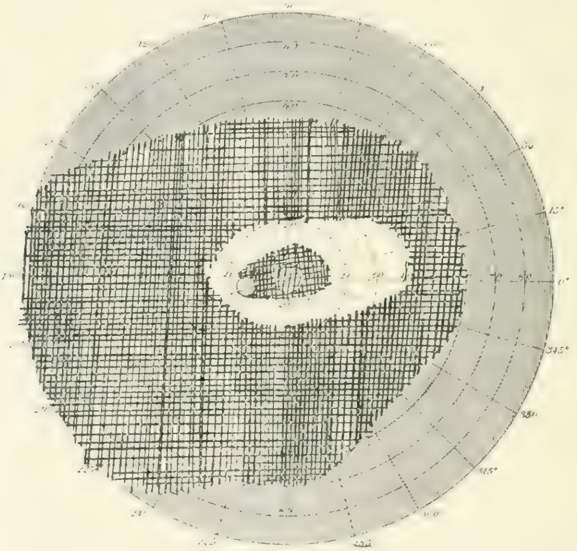
Vision, right eye Pl.; vision, left eye, fingers one foot.

Color perception was absent. The field of the left eye is shown by the accompanying diagram. It is very contracted and presents a central absolute scotoma.

The ophthalmoscope showed complete atrophy of the nerve and retina of the right eye. The vessels were mere threads, and in the upper half of the retina the arteries were almost too small to be seen. There were no retinal haze or lymph deposits along the vessels.

In the fundus of the left eye the picture was much the same, excepting that the papilla still had a slight pinkish hue, and that the vessels were not so small. Two fair sized arterial branches passed across the temporal half of the disc to the retina, one above and one below the macular region.

The central scotoma with the absence of lymph upon the vessels led me at the time to attribute the condition present to a retro-bulbar neuritis, which had been followed by atrophy. But since the publication of experiments made with wood alcohol upon dogs by Dr. Ward A. Holden (Archives of Ophthalmology, Vol. XXVIII, P. 125) another view claims attention. By using Neisser's method of staining the retina and Marchi's osmic acid method upon the nerves, he found the same changes in the ganglion cell and nerve fiber layers of the retina, and the medullary sheaths of the fibers of the optic nerve which he found in experimental



Field for form of left eye taken six months after the development of amblyopia from a toxic dose of methyl alcohol.

"amblyopia following profuse hemorrhage," and in previous studies in experimental quinine amblyopia (Arch. Ophth., Vol. XXVII, P. 583); changes which in brief may be described as follows: These agencies, *quinine*, *profuse hemorrhage*, *methyl alcohol*, cause in some way a contraction of the retinal bloodvessels, as a consequence of which, degeneration sets in in the ganglion cells of the retina and the nerve fiber layer of the retina, ascending thence along the fibers of the optic nerve and optic nerve tracts. This degeneration commences in a few hours after the amblyopia sets in. The conclusion of Dr. Holden as to methyl alcohol is as follows: "The amblyopia due to the use of methyl alcohol therefore, comes into the category of those amblyopias which are due to nutritive disturbances in the ganglion cells of the retina."

He also points out the clinical resemblance of the few reported cases of amblyopia from the use of methyl alcohol to cases of quinine amblyopia. I am unable to refer to a complete record of these cases, but in my own case there is one marked clinical difference, viz., the condition of central vision. It is true that in my case there was a very much contracted field, as narrow in fact as is usually found in severe cases of quinine amblyopia, but in the center of this there was quite a large scotoma corresponding to the distribution of the papillo-macular bundle of optic nerve fibers, such a scotoma as is produced by retro-bulbar neuritis of toxic origin. Now it is well known that loss of peripheral vision with more or less perfect preservation of central vision is characteristic of quinine amblyopia. Yet the ophthalmoscopic picture was like that I have observed in one case and which is so well known in quinine amblyopia.

In the light of Holden's experiments, then, and the clinical phenomena, it is probably safe to assume that ischemia of the retina and retro-bulbar neuritis were both caused at once by the toxic effects of the methyl alcohol, and that atrophy followed. The central scotoma would naturally be explained by the retro-bulbar neuritis and degeneration of the macular bundle. The peripheral loss of vision would find explanation in the ischaemia and consequent degeneration of the deeper layers of the retina.

The question might arise, but cannot be determined with our present light, whether the retro-bulbar neuritis might have been the cause of the obliteration of the vessels and the peripheral changes in the retina. This view would be more naturally entertained had the atrophy been as complete in the left eye as in the right. But the condition of the left eye with its contracted field and narrowed vessels, as before pointed out, in spite of the evidences of retro-bulbar neuritis, which may be taken for granted, sustains the view which is in accord with the very logical conclusions of the characteristic accurate observations of Dr. Holden.

FOREIGN BODY IN THE IRIS.

GEO. H. BICKNELL, M.D.
OMAHA.

The case of foreign body in the iris reported by Dr. M. T. Jay in the May number of this journal brought to mind a somewhat similar case occurring in the practice of Dr. H. Gifford of this city.

The patient, a man aged 55, came as an applicant for pension, on account of poor vision in his left eye, which was practically blind from opacities in the lens and choroidal changes at the macula.

Right eye vision, with refraction corrected, $\frac{20}{20}$.

Upon examination the right iris was seen to be slightly discolored, with pupil the size of a small pin head and absolutely immovable.

There was a small light-colored body about 2x1 mm. in size adherent to the anterior surface of the iris, very close to the pupillary margin.

He gave a history of having injured the eye nineteen years ago while hammering upon what he termed a "nigger head" (*i. e.*, an erratic boulder.)

He said that the eye was moderately inflamed for a few days following the injury but that it soon cleared up and had not troubled him since. Functional tests indicated that the eye was perfectly healthy aside from the close adhesions of the iris to the lens and the abnormally small pupil; but the latter was so extremely small that no satisfactory view of the fundus could be obtained. The man's main complaint regarding this eye, was, that by poor light his vision was reduced out of all proportion to the reduction of the illumination; this of course, is explained by the very small immovable pupil.

There can hardly be a doubt that the foreign body in this man's eye was a small bit from the boulder upon which he was hammering, as had it been iron there would have been further changes in the eye. Under the circumstances an operation was not deemed advisable.

THE QUESTION OF OPERATION ON THE INJURED EYE IN SYMPATHETIC OPHTHALMIA.*

BY ROBERT SATTLER, M.D.,
CINCINNATI, OHIO.

Sympathetic ophthalmia evokes a never ending interest, for it is established without question that no more uncertain or unmanageable lesion is known, one that sooner or later, with infallible certainty, terminates in hopeless destruction of vision.

If the opportune time for preventive surgery has been lost or was overlooked and sympathetic disease is in progress, almost without exception treatment is useless, and blindness alone certain.

Common experience abundantly supports the general statement that enucleation of the injured eye prevents an outbreak of this treacherous lesion in the uninjured one, if practiced before it is established.

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*Read before *Section on Ophthalmology, American Medical Association*, Columbus, Ohio, 1899.

If this is deferred, however, until after sympathetic disease in the fellow-eye has come about, it can influence its subsequent progress at best only indifferently, and in most cases, even unfavorably. (Opinions are still at variance on this point).

In exceptional instances of these almost uniformly fatal cases in which enucleation of the injured eye is too long neglected, and sympathetic disease of the fellow-eye pushes its inexorable course to total and hopeless blindness, it happens that the final outcome for the injured eye (and this is the surprising feature) turns out to be a trifle more favorable. It may even recover with a prospect for restoration of a fractional share of vision through subsequent surgical interference.

It is this clinical fact mainly together with the bare chance of saving by a rational conservatism, the smallest fraction of practical vision in these next to hopeless cases by avoiding, too late, the removal of the injured eye, which has aroused grave doubts concerning the expediency of radical surgery after once the fellow-eye is affected.

These are among the reasons, the last a dominant one, why the question: "Is enucleation, or other equally reliable substitute, for the injured eye, necessary or expedient in those cases in which sympathetic disease is already in progress?—even at present, must be considered an open and unanswered one. Nevertheless there are indications which cannot be gainsaid, and which declare almost at once in favor or against such interference. Certain injuries attended by penetration or puncture of the globe, laceration or rupture of the sclera, etc., which have excited sympathetic disease, but are not accompanied by unbearable suffering, should not be recklessly enucleated. So long as this is not done, there remains the shadow of a chance that it may furnish later on the only opportunity for a fragmentary restoration of sight.

In those cases of cyclitis dolens traumatica, with reduced tension and atrophy of the globe, or after unsuccessful cataract extractions, or if the eye harbors a concealed foreign body, there cannot arise a difference of opinion concerning the advisability of enucleation. It must be done promptly.

This is why on the one hand it may be expedient to temporize, and on the other to practice it, without hesitation, even though it is done with the conviction that it will influence unfavorably the progress of the sympathetic lesion which has invaded the other eye.

These well-known and almost generally accepted conclusions lead to the living question at issue.

Is it ever justifiable to practice extirpation, evisceration, or opticociliary neurectomy of the injured eye when once sympathetic ophthalmia is in progress, after the results of individual and common experience have taught us that in exceptional cases only, the primarily injured eye may ultimately recover with a better chance for some restoration of vision than the one secondarily affected? What can enucleation or its substitutes at this stage of the lesion accomplish? And what are its rational indications and counter indications for these rare cases belonging to this unfortunate category of ocular lesions?

In common with others, my earlier experiences (with far more frequent opportunities for observing these cases than at present) led me, for many years, to practice enucleation in most cases of this class as a possible helpful measure to modify favorably, and also in some cases with a vain hope that it might stay the progress of the fatal lesion. The uselessness, even to influence in any manner favorably, the disastrous course of sympathetic disease, the life-long deformity which the removal of the injured eye entailed, especially with children, to which were added occasional observations which left no room for doubt that the operation, instead of exerting an indifferent influence for good, really brought unmistakable harmful results for the sympathetically affected eye, brought about a change of opinion. These conclusions forced me to restrict it to those cases in which the injured eye was and would remain a source of uncontrollable suffering, either because it harbored a concealed foreign body, or it could be assumed that the pathological process which was in progress would sooner or later force it as a measure of necessity.

For a number of years my management of these cases was in accordance with these conclusions gathered from clinical observation and surgical experience. I could not at that time or since then convince myself even in those few cases, in which, after enucleation of the injured eye, the sympathetic disease became more accentuated, that this was in consequence of the operation, for the treacherous and uncertain course in other cases without such interference had afforded me repeated confirmation that its course and final results were just as fatal or even more so.

What did convince me and impressed me as similar experiences impressed others with the determination to practice the most conservative surgery, were three observations of cases, two of rupture of the sclerotic (with dislocation of the lens under the conjunctiva in one), and a third with punctured wound of the sclerotic. All had excited vicious and destructive sympathetic disease, and in all the injured eye recovered a certain degree of vision through subsequent surgical interference.

It is upheld, on rather limited evidence it is true, (for these cases, as we all know, are fortunately becoming less and less frequent because of the growing intelligence of the general practitioner and the public as well), that enucleation is justifiable in certain cases if practiced during the *earlier* stages of sympathetic ophthalmia.

In support of this statement brief mention of a case which bears upon this point is made:

December 2, 1896, L. O. W., age 24, Logansport, Ind., was struck by a piece of iron in his right eye. January 12th, or forty-one days after the injury to the right eye, the left eye became suddenly and seriously affected. January 14th he came to me. Cyclitis plastica dolens, with reduced tension and exquisite tenderness, was found in the right or injured eye. Plastic irido-cyclitis with atresiæ pupillæ, intense photophobia and reduction of vision to counting fingers at three feet with difficulty, was noted of the uninjured eye. On the same day I removed the right eye and vigorous treatment consisting of leeches, absolute rest in bed, atropine, etc., for the left eye was commenced. After weeks of unremitting attention there came about a subsidence of inflammatory symptoms with perception of light only.

In June, 1897, an iridectomy was attempted and failed. In the autumn of 1897 another attempt to open the dense inflammatory cicatricial union of iris and lens-capsule was made with iris and capsule forceps, Reverdin forceps or hook were alike unsuccessful. At another operation with the knife—a narrow Graefe—an attempt was made to cut out a portion of the iris and lens-capsule, and this was successful. During the intervening months the lens underwent partial absorption. Tension remained low, but not excessively so; perception of light was fair.

In December I made a discission with De Wecker's scissors with indifferent result, but there was perhaps a small opening in the dense cicatricial partition. He had only light perception. Shortly after this another discission with De Wecker's scissors was done and a fair-sized opening was made, which subsequently contracted. It resulted, (test made May 10, 1899), in a restoration of sight which enables the patient to count fingers at two feet, and he can follow his guide without difficulty or assistance.

This is the only case in my experience which stands out as a solitary success, if so it can be considered, among countless failures in other cases to restore practical vision to the sympathetically affected eye, with or without enucleation.

Did early enucleation accomplish or aid in bringing about this favorable result? My conclusion is that it did not. It was practiced because it was indicated as a relief measure and because the eye was hopelessly degenerated and a source of tedious suffering. If, instead of increasing phthisis bulbi (which was present under the clinical picture of irido-cyclitis plastica), the globe had preserved its shape and tension, if the injury had been a punctured wound without marked pyogenic infection and the penetration of a foreign body could be excluded, enucleation in my judgment would not have been justifiable, for it would have taken away the last chance that this, the injured eye, might so far recover that a degree of useful vision might be restored to it in the end.

To summarize briefly the principal points: Enucleation of an injured eye (particularly in rupture of sclera, punctured wounds of globe with extension to uveal tract) when active sympathetic ophthalmia of the fellow-eye has been excited, is not justifiable for the reason that after a complete subsidence of inflammatory reaction in both eyes the *injured eye* alone may offer a chance for partial restoration of sight.

Enucleation of an injured eye which has excited sympathetic ophthalmia is justifiable, often a measure of necessity, in cases of traumatism produced by the lodgment in the eye of a foreign body which cannot be localized. If such eyes are a source of continued suffering, the enucleation should be speedily done, but without hope or prospect that this will influence the course of the inflammatory disturbance.

Enucleation of the injured eye with the hope that it will influence favorably the progress of sympathetic ophthalmia has little or no foundation in accurate clinical observation or surgical experience. There certainly is no reliable proof that it has ever arrested, or even retarded, the fatal course once begun. It must therefore be considered an uncertain measure of interference which expediency even can only counsel in a small fractional number. It must furthermore be added that there are no reliable data that it is harmful in the sense that it excites a more rapid or more disastrous course in the sympathetically affected eye. This is more likely due to the inherent degenerative activity which varies in each case, so far as its destructive fatality is concerned.

THE MYDRIATIC ACTION AND VALUE OF EUPHTHALMIN.

BY EDWARD JACKSON, A.M., M.D.

DENVER, COLO.

Illustrated.

Euphthalmin hydrochlorate, a synthetic product said to be closely related to "Eucain B.", was brought to the notice of ophthalmologists in 1897 by D. Treutler[1], who found it to be a strong mydriatic, brief in its action, and producing no unpleasant effects. His observations have been in the main confirmed by Vossius[2], Schneider[3], Ball[4], Winselmann[5], and Darier[6]. It is worthy the general attention of ophthalmologists, both on account of its real merits, and because of some poorly founded claims that have been made for it.

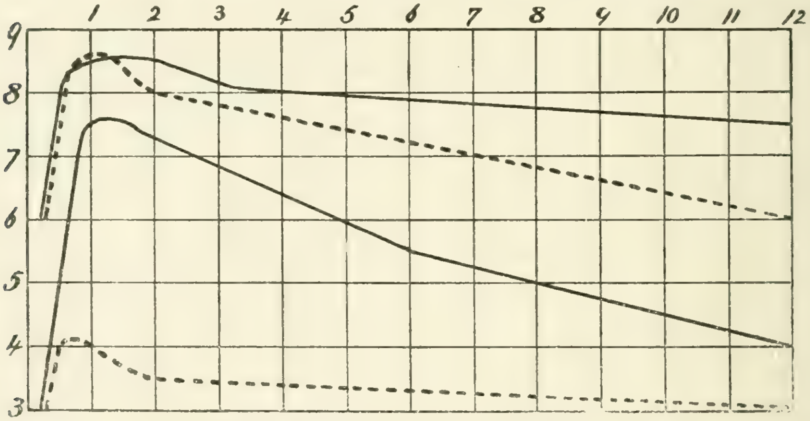
It has been used in solutions of from 1 to 10 per cent in distilled water. In my hands it has caused less conjunctival discomfort than a solution of cocain of equal strength, and about the same sensation as a similar solution of homatropin. It does not, however, cause the subsequent injection of the conjunctival and pericorneal vessels so noticeable after the use of homatropin. The 5 per cent solution, which I have chiefly employed, has no perceptible effect on the visible vessels, the sensibility of the parts, or the width of the palpebral fissure.

Within fifteen minutes after the instillation of a 5 per cent solution, the pupil begins to dilate, dilates very rapidly for fifteen or twenty minutes; and then continues to slowly increase in size until, at a little more than an hour after instillation, it reaches the maximum. By the end of the second hour it has begun to perceptibly contract. The recovery is at first rather rapid, then slower: and is complete in about twenty-four hours.

In no case have I found the pupil entirely fixed and unresponsive to light, even when the drug was producing its maximum effect; and the reflex to light is regained more rapidly than is the normal size of the pupil by feeble illumination.

These facts are illustrated by the accompanying diagram in which the figures on the left indicate the diameter of the pupil in millimeters, while the figures at the top indicate the number of the hours after the instillation. The upper solid curve shows the diameter of the pupil by feeble illumination, such illumination as gives a diameter of 6 mm. to the normal pupil. The lower solid line (running up to 7.5 millimeters) gives the diameter of the pupil on exposure to light, which causes the normal pupil to contract to 3 mm. For comparison, the dotted lines show the diameters of the pupil under similar conditions of feeble and strong illumination, after the instillation of a 5 per cent solution of cocain hydrochlorate[7].

Along with the dilatation of the pupil, there occurs a certain paresis of the accommodation, which begins, reaches a maximum, and passes off with the mydriasis. With the 5 per cent solution of euphthalmin, about one-fourth of the total accommodation is lost at the time of maximum effect. Thus with normal accommodation of 8 D. the drug reduces it to 6 D. With the 1 per cent solution the accommodation is reduced by about one-twelfth of its total amount. This is three or four times as much impairment of accommodation as is produced by solutions of cocain of equal strength. It is about the impairment of accommodation that is produced by a solution of homatropin hydrobromate one twenty-fifth as strong.



Effects of euphthalmin and cocain on the pupil.

The mydriasis produced by euphthalmin seems decidedly greater as compared with the accompanying cycloplegia, being equal to that produced by a solution of homatropin one-tenth as strong.

The period of its influence is also more brief: being on the average one-half or two-thirds that of homatropin. Statements that it is entirely passed off in four, six or twelve hours are probably incorrect. But in six or eight hours the accommodation and the contraction of the pupil to strong light have usually recovered so far as to leave but little annoyance from its action; and if both pupils were under its influence, it would be easy to suppose that recovery was then almost complete.

The sphere of usefulness of euphthalmin appears quite limited, and in that sphere it can be substituted by a judicious combination of cocain and homatropin. But still, for certain uses, it is superior to any other single mydriatic.

To dilate the pupil for diagnostic purposes, when it is desirable to examine the crystalline lens and vitreous by strong oblique illumination, or to use direct sunlight to examine with the ophthalmoscope an eye with hazy media, euphthalmin is, on account of its brevity of action, superior to any other drug.

To dilate the pupil when iritis is feared, but is not certain, it may be preferred to one of the slower mydriatics, as entailing less subsequent annoyance if iritis be not present. It is also distinctly superior to cocain for testing the possible improvement of vision by a mydriatic, in incipient nuclear, polar, or lamellar cataract; because for the time it holds the pupil dilated even in strong sunlight, whereas cocain does not greatly diminish the light reaction of the pupil.

For dilating the pupil in the dark room, for the ordinary ophthalmoscopic examination, or for skiascopy, it is distinctly inferior to cocain. While giving no more satisfactory dilatation during the examination, it does give far greater and more annoying dilatation when the eye is afterward exposed to light. That some have especially praised euphthalmin for this particular use would seem to argue that they were carried away by a novelty, or were not fully acquainted with the value of cocain.

Euphthalmin shares with the stronger mydriatics a diminished power to dilate the senile pupil. In this direction the superiority of cocain is very noticeable[7].

The claim that euphthalmin is free from danger of causing glaucoma, should be met with skepticism. The claim has been put forward for Duboisin, and Homatropin, and has for them been proven false[8]. No one has yet reported a glaucomatous attack following the use of euphthalmin; but the report will undoubtedly come later, if the drug is widely used. It has this advantage over the stronger mydriatics, that the brief mydriasis that it produces may not so often last long enough to develop increased ocular tension. But its mode of action seems quite similar to that of atropin and homatropin; and it is possible that the relatively greater mydriasis it produces, as compared with the cycloplegia, may be fraught with a correspondingly greater danger. At any rate, without wide and prolonged experience with it, we are not justified in ranking euphthalmin with cocain as a comparatively safe mydriatic to use in cases of impending glaucoma.

Euphthalmin produces no perceptible effect on the cornea, and is on this account distinctly superior to cocain for diagnostic purposes. The advantages of both drugs may be largely attained, and their disadvantages reduced to a minimum, by a solution containing 1 per cent of each—

Euphthalmin Hydrochlorate	1
Cocain Hydrochlorate	1
Distilled Water	100

When euphthalmin is used alone, solutions of 2 to 5 per cent will be found most valuable. Weaker solutions are not efficient, and stronger ones do not cause a materially greater effect.

Conclusions.—Euphthalmin acts on the eye as a true mydriatic. Its influence is more feeble and brief than that of homatropin.

Its influence on accommodation is relatively slight; so that it has no practical value as a cycloplegic; and its cycloplegic influence causes but trifling annoyance when it is used as a mydriatic.

It is the best agent we have to produce brief dilatation of the pupil under a strong light; and stands next to cocain in value for dilating the pupil for the ophthalmoscopic examination.

Combined with cocain it produces a satisfactory mydriasis for the examination of the eye, with the least annoyance to the patient and the most rapid recovery.

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THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, JULY, 1899. No. 7. NEW SERIES

EDITORIALS.

THE CONDUCT OF HETEROPHORIC CASES.

At the January meeting of the *Ophthalmological Section of the New York Academy of Medicine* a very interesting paper was read by Dr. Henry D. Noyes on "Muscular Insufficiencies," which, coming from a man of his intelligence and experience, must command attention. The discussion which followed in which Drs. Gruening, Duane and Knapp participated was equally instructive.

The paper and discussion quite fairly mirrors the most advanced thought on the subject, and squarely advocates a middle or conservative position between those extremists who industriously tenotomize a great majority of their confiding patients, and the ultra-conservatives who consider a tenotomy for anything except strabismus a good and sufficient cause for a suit for malpractice. We regret that any argument in favor of a reasonable or medium ground is still necessary. We had hoped that time would dampen the ardor of the extremists on either end of this argument, but this blissful condition may evidently only be observed on the distant horizon of the future. The graduated tenotomy habit seems to be hard to shake off, and when once a surgeon falls a victim to its seductive theories, his fate seems to be sealed, at least for many years.

Most ophthalmologists believe in tenotomies for heterophorias; but it is hoped and believed that only a chosen few believe in them so generally and enthusiastically as to almost constitute a separate school of medicine. It is hoped that most ophthalmologists will endeavor to take a broad and comprehensive view of their patients' condition not forgetting the well-established clinical fact that nearly all heterophoric conditions either disappear entirely or become harmless under a thorough correction of ametropia, and a restoration of any existing ocular, local, or general ill health. And yet we regret to say that there are still surgeons who confide very little in their ophthalmoscopes, and who pay but little attention to the possibilities of refractive errors, irritable spines, misplaced uteri, neurasthenias, emotional and hysterical natures, etc., etc., but study with great promptitude and assiduity the facial expression, poise of the head, and ocular equilibrium, and rarely fail to discover a heterophoric defect, requiring an immediate and nicely-adjusted graduated tenotomy which will probably have to be repeated as long as the physical and financial condition of the patient will endure the strain.

Dr. Noyes emphasizes one point that has probably been borne in upon the minds of most surgeons who have given the subject careful and unbiased consideration—viz., the impracticability of the so-called "*graduated* tenotomy." The absurdity of nicely severing a few of the median fibers of the tendon, to correspond with the degree of heterophoria seems manifest to the average mind. That this hair-splitting theory is not always followed by thoroughly accurate results is sustained by the evidence of one well-known surgeon, who told the writer in a burst of confidence that he had performed graduated tenotomies eighteen times on one eye, and then was compelled to forswear his allegiance to the true doctrine, by committing the unpardonable sin of cutting the tendon off completely. It seems reasonably certain that when the lateral fibers of a muscle are left intact, and only the median fibers severed, that the power of the muscle, while it might be temporarily impaired, will be ultimately restored to its original condition, by the reattachment of the severed fibers to their former position. In all probability most surgeons who deem a tenotomy for heterophoria necessary at all, sever the tendon completely, by delicately drawing it out with the forceps (not the hook) and cutting it off close to the sclera, without touching the capsule of tenon. The writer desires to confidentially express the opinion that this is the identical operation performed by most, if not all, the advocates of *graduated* tenotomies. If this is true, it leaves the "Graduated Tenotomopaths" in the same position as the "Homeopaths"—with nothing left for their delectation but a name.

Dr. Noyes also expresses the belief that much care should be taken in the performance of advancement operations. This also seems a wise precaution, for it is certainly impossible to exactly determine just how much effect will be obtained, by any kind of an operation for advancement, and while a good cosmetic effect may be produced, a heterophoric result may be obtained much more troublesome than the original condition.

In fact it is an extremely delicate matter to meddle with the ocular muscles, and this profitable specialty of ophthalmology should only be assumed by those with proper information and judgment, a mental Arcadia, it may be fairly claimed, only possessed by the few.

In conclusion, the writer desires to state that he believes in tenotomies, not in the so-called *graduated* tenotomies; but he believes in judicious and timely tenotomies, performed only when all other means of relief have proven futile. If tenotomies are held in abeyance until this has occurred, but few will be performed by conscientious surgeons.

F. A.

ON THE DANGERS OF PSEUDO-THERAPEUTICS IN OPHTHALMOLOGY.

The necessity, oftentimes, arises for active measures in the treatment of diseases of the eye, as for example those acute corneal processes, which are rapidly progressing, and due to infection, suggest that some concerted action should be taken by the ophthalmologist whereby those who are over-confident in the efficacy of the so-called absorption methods, healing by the aid of Christian Science, and fads based upon false premises, so-called religious belief and pseudo-science, may realize the dangers arising from time that has been thus lost.

It should, likewise, be more generally known that there are many charlatans who deliberately apply their secret methods and remedies during certain conditions, without benefiting the patient in the least, so that a fresh start has, of necessity, to be made, oftentimes at a charity clinic. In view of these facts, and as regards the art of healing by Christian Science, as applied to the treatment of diseases of the eye, too much stress can not be laid upon the dangers arising from such delay, especially in iritis, where complications from rapidly forming synechiae may certainly be laid to the door of neglect. It is hard to realize that such a large number of people in so many widely separated communities are willing to put in jeopardy, for a single moment, so precious a special sense as eyesight, unless it is another suggestion of the foresight of the late "eminent showman," who ascribed his financial success to the satisfaction the public derived in being humbugged.

The deaths of persons, locally prominent, recently noted in some of the newspapers as having occurred at many localities, distant one from another, show how firmly belief in this method of healing is becoming engrafted upon the people generally, and how difficult it will be to eradicate it. This delusion, if it be a delusion, is constantly gaining strength, and the accessions to the ranks of the believers constitute, as a class, not merely those who have recourse to the charlatan, but are also people of wealth and intelligence. It may not be generally known that a "mother church" has been built, and paid for, at a cost of two hundred thousand dollars, in Boston, and that three nearby branch churches have been established, and notwithstanding this drain upon its membership, the "mother church," with a capacity of fifteen hundred, is crowded at all its services. It is a remarkable fact that the prayer and meditation of a chronic sufferer should have resulted in this new application of the meanings of the bible, and the issue of some two hundred thousand volumes, which have become the text book of Christian Science, and is read in connection with the Bible at all their services in some three hundred and fifty churches, and which to the casual reader "is a mass of unmeaning words," while those who "study and believe declare it to be as clear as Revelation," to quote a recent daily newspaper. There is no especial objection to their caring for the spiritual welfare of an individual if he be inclined that way, but the danger lies in their invasion of the domain of medicine, and especially surgery, and endeavoring to apply their peculiar theories in the healing of disease. The recent declaration of war by the New York Board of Health against unregistered persons practicing medicine, has brought this belief before the public eye, and has started all over the country a wave of discussion regarding the merits and demerits of Christian Science. As the matter now stands, here in Massachusetts, the Legislature seems inclined to take the favorable view that Christian Scientists claim that the science of healing diseases is a part of their religion, and to do this healing they are not obliged to register, and are not subject to an examination as to their qualifications, and would only be proceeded against legally in cases of extreme neglect. The section of the law which bears directly upon the question of penalty for practicing without being registered reads as follows :

"Whoever, not being registered as aforesaid, shall advertise and hold himself out to the public as a physician, or surgeon in the commonwealth, or appends to his name the letters M.D., or uses the title of doctor, meaning thereby Doctor of Medicine, shall be punished by," etc., and under this law the various district attorneys do not feel inclined to attack the Christian Scientist. The Massachusetts State Board of Registration in 1898 offered an amendment which sufficiently covered the ground, but it was not adopted on account of strong protests coming from an unexpected quarter, therefore to-day there are those who believe that in Massachusetts there is no legal barrier to the Christian Scientist practicing as a healer. Such a condition of affairs as this can only be successfully met by display of the same energy and enthusiasm in combating it that has formerly been put forth by its promoters, and it behooves the ophthalmologist, as well as the general practitioner, to be on the alert, and actively aid in promoting the growth of a healthy sentiment in this direction. W. D. H.

MASSAGE FOR ASTHENOPIA.—Pagenstecher observes that the treatment of diminished functions of the eye, with normal or nearly normal vision, is difficult and complicated. Tenotomy and "darkness cures" are seldom needed. Careful examination, glasses and local treatment of the conjunctiva are important, but the remedies used must not be too powerful. Massage is most important of all. The points to be massaged are the bulbus, the lids and the nerves emerging from the orbit, particularly the supraorbitalis. A large number of cases have been cured with massage alone, due to neuralgia (reflex) or to circumscribed sensitiveness of the ciliary body, also asthenopia caused by defective tension in one eye or by resections of the ocular muscles. Slight paresis of the ocular muscles can also determine asthenopia. Reflex asthenopia may be caused by affections of the nose or frontal sinus. Treating the general health proves frequently of the greatest importance. Relapses may occur even after the most brilliant successes.—*Munch. Med. Woch.*, December 20, 1898.

TRANSLATION.

GLASS EYE-BALLS AS OCULAR PROTHESIS.

BY PROF. H. SNELLEN.*

Translated by Melville Black, M. D.

DENVER.

Illustrated.

"It has been attempted in former times to lessen and correct the evils resulting from the loss of an eye by means of protheses, which were classified into ecblepharos and hyperblepharos. The former were partial masks, i.e., plates on which the eye and the eyelids were painted or imitated and were worn in front of the socket.

By hypoblepharos was understood all those protheses which were introduced under the lids. The manufacture of artificial eyes was first instituted at the beginning of this century. Small metal concave shells were so prepared that they would cover the atrophied eye under the lids. The eye was imitated in enamel as nearly as possible. It was in Paris that most of the enamel arts were cultivated, and it was there that the best artificial eyes were prepared. †"At the present time (1818) it is an art and an industry entirely French to which foreigners must pay tribute." Those who were unable to go to Paris used to send a painted imitation of the normal eye with the exact description of the size and form of the orbit. But since the enamel was not lasting, and the artificial eye had to be renewed every year, an attempt was made to use cheaper material, at first porcelain, later glass. At first the eyes so prepared were heavier and thicker than those made from enameled metal. Soon, however, the supply became better and cheaper, so that the buyers had a larger stock to choose from. The ready-made artificial eyes were naturally much cheaper than those made to order. For the latter Paris for a long time remained the principal source of supply, and the firm Boissonneau was thereby made famous. Even now their products satisfy the most severe requirements.

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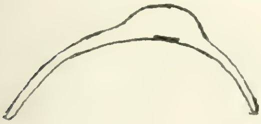
*Read before The *Holland Ophthalmological Society in Rotterdam*, Dec. 11, 1898. Published in the *Klinische Monatsblatter fuer Augenheilkunde.*

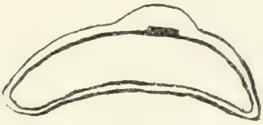
†Hazart-Mirault. *Traité pratique de l'oeil artificiel*, Paris, 1818. Preface p., XI.

In other places the glass-blowing industry made an attempt to better both the likeness and form. Like the enamel eyes the glass eyes had the shell form, for originally they were only intended to be placed over an atrophied eyeball. The manufacture and sale of artificial eyes remained an industry by itself, and did not belong either to the surgical or ophthalmological fields. Operative procedures were preferably avoided and excluded as much as possible in order not to frighten away the purchaser. Hazart-Mirault says about the extirpation of the eyeball, "In whatever case it may be we never advise so cruel an operation for so slight an advantage."

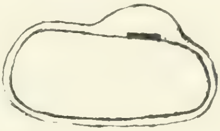
The newer ophthalmology, however, teaches that there are a large number of indications which render the extirpation of the eyeball desirable and necessary; pain in a blind eye, calcifications in an atrophic eye, neoplasms, and danger of a sympathetic transference to the other eye, are just so many indications. Also, the bad appearance of an enlarged and deformed blind eye is a cosmetic reason for operative interference not to be underestimated.



Cross section of the eye shell.



Cross section of the double-walled artificial eye.



Cross section of an artificial eye-bulb.

The number of extirpations has steadily increased; nevertheless, the same shell-shaped artificial eyes have always been used.

The simple extirpation out of Tenon's capsule, with amputation of the tendons and optic nerve close to the bulb, has not been so very long in use. It was performed in Dublin by J. M. Ferrall, and in France by Bonnet, in 1841. If the conjunctival sac is protected as much as possible, there is sufficient room for the artificial eye; there is one disadvantage, however, viz., that an empty space is formed in the cavity of the hemispherical prothesis, in which tears and mucus accumulate. Furthermore, the sharp edges wound the conjunctiva, and produce scar and granuloma formation. In addition, the motility is much less than when the shell is placed upon an atrophic eye. Therefore the question arose, in what way could the advantages of a stump be retained? This was first raised in Holland, at a previous meeting of this body, by Prof. M. E. Mulder, of Groningen.

In a dissertation by J. E. Dubanton it was shown, based upon experiments made upon the cadaver and animals, that simple extirpation out of Tenon's capsule may be replaced by evisceration of the eyeball, the sclera being preserved. Through A. Graefe, of Halle, this operation was introduced into his clinic. It has been performed by others with certain alterations. The principal modification gives the so-called Mules operation. Mules places a glass ball in the eviscerated sclera; in this way a stump is formed, which fills the dead space behind the artificial eye and contributes to mobility.

For those cases in which one is compelled to remove the entire eyeball the operation of Adams Frost is suitable, in which, after the simple extirpation the glass ball is placed in the cavity formed by Tenon's capsule. Lang makes use of this method in a large number of cases.

The advantages and disadvantages of these different operations have been a great incentive to discussion up to the present time. Just a short while ago a valuable report* was issued by a commission appointed by the Ophthalmological Society of the United Kingdom to investigate the value of simple extirpation in comparison with other proposed substitute operations. The following are the principal operations to be considered: evisceration according to Graefe, Mules' Operation (evisceration with insertion of a glass ball in the scleral cavity), and the operation according to Adams Frost (extirpation with insertion of a glass ball in Tenon's capsule). The same subject is on the program for the session of the Ophthalmological Department of *International Medical Congress* which will be held in Paris in 1900.

The preservation of the stump in the socket either by evisceration of the scleral cavity or by the insertion of a glass ball is of great advantage for the motility of the artificial eye; the principal advantage, however, is, and this is of special value, that by this means the dead space in which mucus and tears collect is closed by the heretofore employed shell-shaped artificial eye which lies on the stump.

It seems to me that in suitable cases this disadvantage may be avoided after simple extirpation in another way.

After extirpation cannot the shell-shaped eye be replaced with advantage by one with which no dead space will remain? With this object in view I have made some experiments by filling the ordinary shell-shaped eye with plaster, later with a gutta-percha preparation such as is used in dentistry ("Gilbert's temporary stopping"). The latter satisfies all

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***Transactions of the Ophthalmological Society of the United Kingdom.* Vol. XVIII. London, 1898, page 233.

requirements. It becomes soft in warm water, assumes then any desired form, and its surface remains soft and smooth. This experiment gave immediately the desired success. Although the filled eye was much heavier, it was nevertheless preferred by the patient to the shell-shaped artificial eye, because the sharp edges were now covered, and no more conjunctival secretion collected.

In August, 1898, after the Heidelberg Congress, I visited Müller Bros. in Wiesbaden to consult with them in this matter. They were immediately ready to imitate such filled artificial eyes by using all glass, making hollow glass shapes. Through the universally recognized great skill of these gentlemen the attempt immediately succeeded, and a large number of patients now wear these bulb-shaped protheses, the advantages of which they loudly praise. They cause much less irritation and are easily inserted and removed, and they may also be worn during the night without disadvantage. Later there appeared this advantage, viz., that the conjunctival sac and eyelids easily adapt themselves to the rounded margins of these artificial eyeballs so that even imperfectly fitting eyes much better satisfy the requirements after they have been used a short time.

These protheses are made out of thin, light, but strong glass weighing on the average three grms., and are not much more expensive than the former shell-shaped eyes.

Müller Bros. prepare these in accordance with individual cases either as double-walled eye-shells or as artificial eye-bulbs with convex or concave posterior walls.

Undoubtedly the good results of these attempts must contribute to make the simpler, and especially as regards after-treatment, the more convenient simple extirpation preferable to evisceration in those cases in which removal of the eye appears necessary.

REVIEWS.

TATOUAGE DE LA CORNÉE ET OPHTALMIE SYMPATHIQUE. Trousseau, *Annals d'Oculistique*, March, 1899. In order to emphasize possible danger as a result of tattooing leucomata for cosmetic effects, the author relates a recent experience of his own in which he saw in consultation a patient twenty-four years old who had a leucoma of the cornea with synechia resulting from purulent ophthalmia in infancy. As the eye retained a vision of one-tenth, had never shown symptoms of irritation, and was complicated with the synechia, the operation was not advised. Notwithstanding, the operation was undertaken and was immediately followed by a severe iridocyclitis which lasted about two months, after which the eye became more quiet, there remaining only a moderate pericorneal injection. At the end of another two months the patient was led to the clinic perfectly blind, the operative eye having commenced to shrink, while the other was passing through a very violent iridocyclitis, with posterior synechiæ and no fundus reflex, of undoubted sympathetic origin. The patient remained blind after enucleation and a course of mercury. Mention is also made of another patient who became practically blind after tattooing a leucoma uncomplicated in any degree. A glance at the literature shows that Rava in 1872, Reuss in 1873, and Panas in 1878, have already called attention to the dangers in this procedure. Rava, as quoted by Panas, claims that tattooing is always followed by pain, injection and lacrymation requiring an interval of quiet before the next seance. Panas mentions a young man in whom there was violent reaction after two seances, the latter of which provoked a violent sympathetic iridocyclitis, and also a young girl who went through a violent purulent iridocyclitis and an enucleation before the appearance of sympathetic inflammation. Lucas-Championniere and Giraud-Teulon narrate similar experiences. The recent notions regarding the genesis of sympathetic ophthalmia as being due to the migration of micro-organisms in a way explains the injurious role played by tattooing, which in most cases is a septic inoculation associated with the introduction of foreign bodies into the tissues of the cornea. The author thinks that the benefits to be derived from this procedure have been greatly exaggerated and would make use of it only where a decided improvement in vision or where increased facility in obtaining occupation might be expected, and warns against the too ready acceptance of the belief that the operation is without danger.

W. D. HALL.

L'EXTIRPATION DU SAC LACHRYMAL. Aronis (Smyrna) *Annal. d'Oculistique*, March, 1899.—M. Aronis believes the operation for extirpation of the lachrymal sac to be one of great practical value when a diseased condition obtains, as preliminary to the removal of cataract, or as a therapeutic resource in the treatment of destructive ulceration of the cornea. According to Kuhnt, in 466 corneal processes of this sort fifty-eight per cent of them were associated with disease of the sac. The participation of the sac in granular conjunctivitis is another argument in favor of the removal. The difficulty of a complete removal has brought the operation into disfavor, for if a very small portion of the mucous membrane remains behind a secreting cavity results. There are two methods in general use, common to both being the incision from the caruncle to the crest; some open the sac and detach it after exposing the mucous membrane, while others seize the sac and remove it without exposing the interior. Terson in the majority of cases uses the thermocautery, reserving extirpation for dilated sacs; his incision begins one-half centimeter above the internal palpebral ligament, which is divided. M. de Wecker considers the operation of extirpation very difficult of execution, it being carried out in the bottom of a wound which is constantly full of blood. Kuhnt in 1887 described a method by which the sac can be easily extirpated: First step, "The assistant exercises tension upon the skin drawing it toward the root of the nose. The operator standing at the head of the operating table presses with his left thumb nail exactly upon the anterior lachrymal crest and incises along the nail down to the periosteum. In length the incision should be 2.5 cm., should commence 4 mil. above the internal ligament and finish 5 mil. beyond the commencement of the nasolachrymal canal. Scissors may be needed to divide the ligament. The hemorrhage is trivial. Then seizing the temporal flap, the operator carefully excises the fibrous capsule along the crest, taking care not to injure the mucus membrane or to open the sac." Second step, "The operator by means of blunt scissors separates the internal surface of the sac from the periosteum, then seizes this with its fibrous envelope, and detaches it from the bone, cutting with the scissors a little up and out. In order to separate the internal and anterior surface, let the assistant draw the temporal flap strongly outward while the operator draws the upper extremity of the sac inward, when it can be easily set free by a few cuts with the scissors. Then separate the sac from the nasolachrymal canal and curette the canal itself. Then suture with drain. The author has witnessed and assisted in the extirpation of the sac in many of the nine hundred times that the operation has been performed by Professor Kuhnt and his pupils, and expresses himself as a believer in its value. That which makes the method successful is the line of the primary incision which lays bare the sac with a mathematical accuracy without opening its cavity. It is also of the greatest importance to seize its summit together with its fibrous envelope, for to do otherwise is to expose it to injury by which the extirpation becomes difficult. The healing process is usually by first intention, but if tardy a slight curetting may be in order. The operation is of course not indicated in acute abscess and in acute periostitis. Kuhnt recommends the operation to relieve the following conditions: 1. Sacs in a catarrhal or purulent condition complicated with a fistula; in sub-acute cases the probe may be tried first. 2. Chronic disease dependent upon a dilated sac. 3. He advises extirpation in all cases of chronic dacryocystitis of long duration which have not improved by using sounds and irrigation. 4. In recent cases of dacryocystitis complicated with ulcus serpens, or where one intends to operate for cataract or glaucoma, or after an injury to globe. 5. In caries of the lachrymal bone or the frontal process. 6. It is also advised in those cases of granular ophthalmia in which the sac contracts and secretes a minimum amount of thick secretion. W. D. HALL.

OPTIC NEURITIS IN THE LOCALIZATION OF INTRA-CRANIAL TUMORS. —By Marcus Gunn, M.B., F.R.C.S., *Brain*, Part III, 1898, page 332. In the course of an interesting discussion on "The Accurate Localization of Intra-Cranial Tumors, excluding Tumors of the Motor Cortex, Motor Tract, Pons and Medulla," Mr. Gunn says that the outstanding facts of his investigations, and of all clinical experience are, first, the great frequency of optic neuritis as a symptom in connection with brain tumor; secondly, the particular proneness of the optic nerve to be affected in tumor of the cerebellum, and, after it, in tumor of the basal ganglia, and of the occipital, frontal, and temporo-sphenoidal lobes of the cerebrum, these being mentioned here in the order of greater frequency.

Such facts are, however, evidently of practically no localizing importance in any particular case. Indeed, common as optic neuritis is in intra-cranial tumor, we know that a large new growth may exist, and be found after death, without any optic neuritis having been present; while, on the other hand, optic neuritis has been diagnosed during life, without any cause for its occurrence being recognized by highly competent observers at the autopsy.

It is not so much the locality of an intra-cranial tumor, as its behavior, that influences such symptoms as headache and optic neuritis. Rapid growth or liability to sudden congestion; association with an increase of cerebro-spinal fluid; or a complication with basal meningitis, are the facts that seem to particularly predispose to the occurrence, and afterwards to the severity, of inflammation of the optic nerve. It is doubtless in consequence of this relation between behavior and intensity, and not from anything particular in the mere position of the new growth, that tumors affecting the cerebellum peculiarly predispose to involve the optic nerve.

Such being the case, is there anything in the character and behavior of the optic neuritis itself, apart from its mere occurrence, that is of any localizing value? Mr. Gunn says that he has the support of some of his medical colleagues in believing that cerebellar tumor very often excites a peculiarly intense optic neuritis, with great engorgment of the papillæ, and marked œdema of the surrounding retina, with, not uncommonly, a macular stellate figure similar to what is seen in so-called albuminuric retinitis. He offers elsewhere an explanation of this retinal condition, reconciling the liability to its occurrence from very different causes, and says that all he needs to say here is that, as regards all forms of intra-cranial disorder, this retinal appearance, with intense papillitis, is, in his experience, most apt to occur in cerebellar tumor and in basal meningitis; perhaps in cerebellar tumor because it may so readily cause a basal memingitis. He has met with this form, however, in at least two cases of frontal tumor, in neither of which, he believes, was there any evidence of the basal meninges being involved.

It is known that, in some cases of optic neuritis, there is a markedly rapid increase in the amount of swelling of the papillæ, presumably due to a concurrent increase of intra-cranial pressure, for the converse at least is true, that a surgical relief of intra-cranial pressure is followed by, and doubtless causes, a similarly rapid diminution of disk prominence. If it can be shown that tumors in certain localities are particularly liable to raise intra-cranial tension, then this ophthalmoscopic sign would have some localizing value, but not otherwise.

And now a few words as to the possible relationship between uniocular optic neuritis and one-sided brain tumor. The explanation of optic neuritis accompaning intra-cranial tumor is confessedly still obscure, and it is difficult to realize why, on any of the theories advanced, one optic nerve should be attacked and the other long remain normal. But unilateral excess of neuritis may admit of explanation.

First.—If optic neuritis be of the nature of a gradually extending inflammation, communicated along the pial sheath of the nerve from the basal meninges, a greater proximity of the exciting tumor to one optic foramen would cause the optic nerve passing through it to be first involved. If this reasoning be correct, in the case of a one-sided growth affecting the base far forwards in the frontal and anterior part of the temporo-sphenoidal lobes, the optic neuritis would be first recognized, and would for some time be in excess on the same side as the tumor. In the case of a tumor located further back, the affection of the pia mater would presumably extend forward equally along both nerves after it had reached the chiasma; and in such a case, accordingly, the optic neuritis might be expected to appear practically simultaneously, and be equal in intensity, on the two sides, and that, in any case, it would have no lateral localizing significance. So much for theory. Statistics lend considerable support to this reasoning. Taking the important analysis of 601 cases of tumor, made by Dr. J. M. Martin last year, and paying attention to the relation between position, occurrence of optic neuritis, and difference of neuritis on the two sides, Mr. Gunn found that there was unilateral neuritis (or excess) in ten cases of frontal tumor, and in eight of these it occurred on the *same* side as the tumor. In four cases of neuritis-difference, in cases of temporo-sphenoidal growths, the one-sided excess was always on the *same* side. Putting these together, there is the unilateral excess of neuritis on the same side as the tumor in twelve cases out of fourteen.

In regard to the cases of tumor in the parieto-occipital lobes and on the cerebellum, the unilateral character of the neuritis was noted in ten such cases altogether; in *five* of these it was on the *same* side as the tumor, and in *five* on the opposite side. Statistics are dangerous, Mr. Gunn admits, but these facts are certainly striking.

Another interesting statistical result bearing upon this argument is, that a one-sided difference of neuritis proves to be much more common in tumors of the cerebral lobes than in tumors of the cerebellum; it occurred in 20 per cent of all the instances of neuritis with tumor of cerebrum; in only about 3 per cent of those associated with tumor of cerebellum. This is, of course, in favor of its being communicated by contiguity.

Second.—On the theory of a *descending cerebritis*, it is impossible to understand how the inflammation can fail to be transmitted along both optic nerves on passing the chiasma, even though it had previously been confined to one optic tract. The same remark applies to the supposed influence of the external geniculate body.

Third.—If increased intra-cranial pressure be taken as the determining cause, it is manifest that the actual tension must be the same in all parts of the cranial cavity, and that, if the two optic nerves are symmetrically situated, they must be equally exposed to the effects of the pressure. But it is possible that anatomical differences, developmental or pathological, may be responsible under pressure-causation for some of the very rare cases where one optic nerve only is inflamed, and of the much more common instances of one nerve being involved in advance or in excess of the other. Minor degrees of want of symmetry of the cranial bones on the two sides are not uncommon. And should the disposition and size of the optic canals be in this way different, it is conceivable that this may determine the escape of one nerve, or a modification of its proclivity to the effects of pressure. But of this form of a symmetry nothing exact is known. In an autopsy on a case of one-eyed neuritis in intra-cranial tumor, it would be well to investigate the possibility of some such anatomical explanation.

Of want of symmetry further forward, however, much more is known. Mr. Gunn thinks it is a fairly general belief, as was pointed out by Gowers, that optic neuritis is, on the whole, more common in hypermetropic eyes. If, with due regard to the frequency of hypermetropia, this is really true, as it seems to be, then it would be interesting to find how far this may be responsible for unequal optic neuritis. In measuring the swelling of the papilla we always estimate the refraction of the eye away from the optic disc, at or near the macula by preference, and it is customary from these data to compare the height of the disc above the general fundus-level in the two eyes. But it would be important, also, always to compare the refraction of the two eyes. How far such a factor is influential, Mr. Gunn is unable at present to say; it is unlikely that it should be important except where the difference in refraction is very decided. Of course, its influence, if actual, would minimize the localizing value of unsymmetrical optic neuritis, restricting its applicability to cases where the refraction of the two eyes is the same, or nearly so.

On the whole, then, while the value of the ophthalmoscope in the diagnosis of intra-cranial tumor is fully recognized, it is necessary to be on guard not to expect too much from such information, either as to the size of the tumor or its localization, or disappointment will be the result. Carefully recorded observations, however, may yet teach us much that we wish to know. At present Mr. Gunn does not think that we are justified, in respect to this method of localizing intra-cranial growths, in saying more than—

(1) That intense double optic neuritis, with much swelling and surrounding retinal change, coming on quickly, suggest the *cerebellum;*

(2) That one-sided optic neuritis, or marked difference, suggests the *cerebrum*, and is, on the whole, in favor of the tumor being on the same side as the excess of neuritis, where there are other reasons for localizing one in the front of the cerebrum. ALVIN A. HUBBELL.

IT HAS been reported through the press that Queen Victoria had cataracts, and that she had consulted Professor Pagenstecker, of Wiesbaden, who advised an operation, and assured Her Majesty of a good result. The *British Medical Journal* of May 31, however, says that it has the best authority for stating the alarmist reports in regard to Queen Victoria's sight are erroneous, and that the rumors of a contemplated operation upon Her Majesty's eyes are mere invention. We trust the latter report is true, as the Queen is beloved not only in her own country, but in this, and we hope that at her age she will not be compelled to pass through such an ordeal.

WE ARE happy to be able to state that Dr. Edward Jackson, formerly of Philadelphia and now of Denver, will be added to the editorial staff of the OPHTHALMIC RECORD. Dr. Jackson needs no introduction to the readers of the RECORD. Hardly an ophthalmologist in America is better or more favorably known to the profession. His work and writings upon the subject of refraction and skiascopy have given him an authoritative position on these subjects. Dr. Jackson will have particular charge of these subjects in his work on the RECORD, but, of course, it will in no wise be limited to those departments, as his reputation on all subjects pertaining to ophthalmology are of the very highest possible quality. We give Dr. Jackson a hearty welcome to the staff, and while we congratulate him upon being connected with the RECORD, we desire also to heartily congratulate the RECORD and all its readers.

REPORTS OF SOCIETIES.

AMERICAN MEDICAL ASSOCIATION.

Abstract of papers read before the Section on Ophthalmology, Columbus, June 6–9, 1899. Reported by H. O. Reik, M.D.

The meeting was called to order by the president of the section, Dr. Casey Wood, of Chicago, who delivered the address of the chairman, entitled "*How May the Ophthalmic Section Do the Most Effective Work?*"

Dr. Wood referred to the very large number of papers which are now annually presented to this section, and showed that the superabundance of material, while all good, prevented the deliberate consideration of any portion of it. He suggested that the program hereafter be limited to forty papers, fifteen of which might be contributed on the invitation of the chairman and the remaining twenty-five be volunteer contributions, selected by the executive and executive committee from the titles and abstracts sent in before a certain date. This will allow for more time in the reading of each paper, and a reasonable time for their discussion. He also suggested that we might have reports of each meeting from specially appointed committees on the efficacy of such new agents, or instruments, as might appear to be worthy of investigation.

His paper was referred to the executive committee with instructions to report at a later meeting.

The Treatment of Trachoma by Cupric Electrolysis.—Dr. Geo. F. Keiper, of La Fayette, Indiana. The author refers to a number of experiments performed to prove that substances can be made to penetrate the tissues by means of the electric current, and proposes applying this to the treatment of trachoma. The method suggested is based upon the following experiment: Take a carbon electrode, attached to the negative pole of the battery, and a pure copper needle, attached to the positive pole, and introducing the needle into a piece of meat, turn on the current. On cutting the meat open, the region around the needle will be found of a green color, and chemical examination shows this to be due to the oxy-chloride of copper which has been formed. As this substance has a decided germicidal action, it is relied upon to destroy the trachoma granules when the copper pole is applied to the conjunctiva.

Discussion.—Dr. J. G. Huizinga, of Chicago, considered that if we believe trachoma to be the result of a specific infection, then this treatment deserves more than a passing notice. He believed that such a current would penetrate the conjunctiva and destroy or neutralize the cause of trachoma, but it would not reach the disease if it were very deeply imbedded. He said that the distance between the anode and cathode should never be less than five inches, because the amount of chlorine ions between the two poles must be sufficient to meet any demands that may be made upon them.

Dr. Lucien Howe, of Buffalo, thought that the treatment would probably be painful, and he doubted the ability to introduce medicines into the tissue in this way, since his attempts to produce the characteristic starch-iodine reaction had always failed.

On Seeing the Capillary Circulation in One's Own Retina.—Dr. C. E. Norton, of Lewiston, Me. Dr. Norton states that by looking at a clear sky through a piece of dark blue glass one is able to see small bright objects moving in all directions with a peculiar jerky motion, and these particles he believes to be the blood corpuscles in the capillaries of the retina. That they are not muscæ volitantes is shown by the following characteristics: They are of definite size and shape, they cannot be made to move back and forth along any given path by movements of the globe, but move only in definite lines, and gravity has no effect upon them. They move in a jerky manner, and this motion is synchronous with the heart beat and can be increased by anything that increases the pulse rate. This phenomena is more easily seen through blue than through other colored glasses, and it has a practical bearing in that, when seen by persons who are not looking for them and without the aid of glasses, they probably indicate ocular overwork.

Discussion.—Dr. Geo. M. Gould, of Philadelphia, stated that he had not tried this experiment, but that from a theoretical consideration of the subject he doubted the ability of the eye to see such small subjects as the red corpuscle.

Dr. A. B. Hale, of Chicago, called attention to an article in the *Monatsblatter* of April, 1897, in which the author offers detailed evidence in support of Dr. Norton's studies and even thinks he can detect the white from the red corpuscles.

Dr. Edward Jackson, of Denver, said that he was able to see these corpuscles always against a blue sky, even without the aid of the glass and he believed it was possible because the corpuscles were in such close relation to the retinal percipient elements that the image became as large as the object.

Nutrition of the Crystalline Lens and its Relation to Cataract Formation.—Dr. Lewis Stricker, of Cincinnati. Dr. Stricker attributed the nutritive control of the lens to the epithelial cells of the anterior chamber and considered them not only as the greatest factor in the production of the lens but in its protection against the inroads of disease. If their protective power be once annulled the train of changes takes place in a perfectly passive manner, subject entirely to the intensity of action of the chemically altered nutritive fluid. What this chemical change consists in must eventually be solved by the student of physiological chemistry.

Discussion.—Dr. J. L. Thompson, of Indianapolis, referred to a peculiar opacity in the lower inner margin of the lens rarely ever seen in persons under fifty and which rarely ever causes complete cataract. He asked if gravity had anything to do with this.

Dr. Harold Gifford, of Omaha, and Dr. J. B. Worrell, of Terre Haute, Ind., both stated that they had watched such cases as Dr. Thompson referred to for a number of years without noting any change.

Quinine Blindness in a Young Child.—Dr. H. Moulton, of Fort Smith, Ark. (To appear in full in the August RECORD.) This case was as follows: F. V., aged three years, was first seen by the author on August 24, 1898, totally blind. On August the 4th and 5th he had been given each day twenty grains of the bisulphate of quinine for malaria. His physician, thinking that the fever was tending toward the pernicious type, now gave doses of twenty grains each day on the 6th, 7th and 8th of August. On the ninth day ten grains were given again, and on the 10th it was discovered that the boy was blind. Ninety grains in all had been given during the five days previous to the discovery of blindness, which was absolute. The pupils were dilated, the optic disks perfectly white, and the blood vessels almost obliterated, appearing as mere threads. Treatment was promptly instituted, and when last heard from, on December 12th, the vision had been to some extent recovered, so that the child could find pencils, etc., dropped on the floor.

Discussion.—Dr. Geo. E. de Schweinitz, of Philadelphia, said that he had analyzed more than one hundred cases of quinine blindness, and this was, with one exception, the youngest on record. He stated that usually blindness from quinine is primarily complete, but that recovery takes place, although contraction of the field and deficiency of the color sense generally remain. In regard to therapeutics, he considered time the best agent.

Dr. Thompson inquired if it were not possible that some of these cases were due to effusions of serum into the ventricles of the brain rather than to the action of quinine?

Dr. G. C. Savage, of Nashville, Tenn., reported a case of a young man who had been the subject of quinine blindness in childhood and who had grown to manhood before he discovered that his visual field was more limited than that of other people.

The Examination of the Visual and Color Sense of Railway Employees.—Dr. C. H. Williams, of Boston. Dr. Williams explained the method in use by the New York, New Haven and Hartford railroad, where he selected such employees as train dispatchers, and devoted considerable time to instructing them how to make color tests. He exhibited a number of cards of test letters, so arranged as to prevent the possibility of memorizing, and some cards showing illustrations of the semaphore of the size to subtend an angle of five minutes at twenty feet, and corresponding to the ordinary semaphore signal as seen at a distance of half a mile. He also exhibited a new lantern for use in testing the color sense.

Discussion.—After some discussion of this paper, the committee appointed to report upon the best visual and color tests for railroad employees, recommended that consideration of the subject be postponed until after the meeting of the International Committee, which is considering the same question, reports in 1900.

Report of Seven Cases of Retinal Sequelæ of Diseases Affecting United States Troops in Cuba and Porto Rico.—Dr. W. K. Rogers, Columbus. This paper will appear in full in the August OPHTHALMIC RECORD.

Discussion.—Dr. Weeks stated that the changes we find in the retina and optic nerve after such diseases are consequent, in all probability, on the changes that take place in the blood, interfering with the nutrition of the vessel walls, and permitting exudation, etc.

The meeting was called to order by the President, who announced that the morning session would be a joint one with the section on otology and laryngology.

Some Points in the Symptomatology, Pathology, and Treatment of the Sinuses Adjacent and Accessory to the Orbit.—Dr. Charles Steadman Bull, of New York. Dr. Bull stated that the frontal sinus, the ethmoidal cells, the sphenoidal sinus and the maxillary antrum, are often the seat of disease which subsequently extends to the orbit, and that tumors of the bones of the skull, or the sinuses contained within these bones, may extend in every direction from one sinus or labyrinth to another, and often exist for a long time and reach a large size before appearing in the orbit. He then considered in detail the diseases of each of these regions, with a full consideration of the best means for treating them.

Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye.—Dr. J. H. Bryan, of Washington. Dr. Bryan stated that, as in diseases of the nose, the affections of the frontal sinuses are frequently accompanied by ocular reflex disturbances, but they are frequently overlooked because of the difficulty in making a diagnosis of the diseased condition of the sinus. The reflex symptom most frequently observed in these cases is neuralgia of the supraorbital nerve. Abscess of the orbit is rarely primary. In the majority of instances it is the result of extension of inflammation from one of the sinuses, generally the front one.

Affections of the ethmoidal cells are generally caused by diseases of the nose, and the eye may escape injurious effect so long as there is free discharge into the nose. To what extent sphenoidal diseases exist there is no means of knowing, since the diagnosis is extremely difficult. A number of cases are reported in this paper, illustrating the diseases of these cavities.

Eye Troubles Attributable to Naso-pharyngeal and Aural Disturbances.—Dr. Jos. A. White, of Richmond, Va. Dr. White remarks that from a study of the relations between naso-pharyngeal and eye troubles, it will be observed that disease is transmitted from the naso-pharynx to the eye in more than one way—it may be direct microbian contamination along the lachrymal passages; it may be by mechanical obstruction of the nasal duct at its lower end or in its canal; it may be by the propagation through the blood vessels and lymphatics; it may be by toxine poisoning or by reflex nervous influences.

When we analyze the recorded cases of ocular phenomena in aural troubles we find that there is occasionally some uncertainty about the connection of the two. Still, whilst much is yet to be explained in regard to pathological influence of the ear on the eye, we may conclude from what we have before us that the influence really exists, and is exerted by both direct and indirect propagation by way of the nerve tract and blood current.

Analysis of Cases of So-called Chronic Glaucoma, with Special Reference to the Visual Field—Dr. Geo. E. de Schweinitz, of Philadelphia.—Based upon a study of sixty-three eyes suffering from chronic glaucoma and an examination of 184 charts of the visual field, Dr. de Schweinitz discussed the subject under the following headings: 1. The commonly described visual field phenomena, or the so-called typical form of contraction. 2. The horizontal hemianopic visual field. 3. The various atypical contractions of the visual field, to which the following names were given: the acorn field, the dumbbell field, the angle field, and the kite-shaped field. 4. The various forms of scotoma. 5. Sentient islands within the darkened areas; and sixth, the color fields.

It was pointed out that although it was commonly stated that the nasal field was earliest and more severely affected, this was by no means the rule. The average of all his observations yielded a visual field with the following dimensions: Outward 56, upward 26, inward 25, and downward 37 degrees. In other words, a field which was concentrically restricted and not specially restricted on the nasal side.

Although it is commonly stated that in glaucoma the color fields present a restriction corresponding with that of the form fields, Dr. de Schweinitz's observations led him to believe that this could not be regarded as a differential test from simple atrophy, inasmuch as frequently the color field is correspondingly much more contracted than the form field.

His observations led him to believe that in all cases careful study of the field would usually demonstrate a scotoma in some portion of it, and he felt that a study of these scotomas would be more profitable as a method of differentiating this disease from optic atrophy than the color field, as they might also have some relation to the prognosis of operative interference.

Discussion.—Dr. Thompson referred to the unsatisfactory results so often accompanying operative interference in simple glaucoma, and said that we could count no one happy who labors under this disease, until he is dead.

Dr. Leartus Connor, of Detroit, spoke of the importance of carefully correcting even the small errors of refraction in these cases, and of giving attention to the conditions of defective assimilation which so often exist at the same time.

Dr. Eugene Smith, of Detroit, referred to the difficulties of an early diagnosis in this disease, and stated that the tension of the eye frequently varies if taken at different periods of the day; for instance, in the morning there may be no tension, and in the afternoon a tension of plus 1. In operating he preferred sclerotomy to iridectomy.

Dr. Flavel B. Tiffany, Kansas City, stated that he believed the glaucomatous condition was becoming much more rare since we have been giving such careful attention to refraction.

Serous Cyst of the Iris following a Discission for Milky Cataract.—Dr. S. C. Ayres, of Cincinnati. The patient, G. R., aged six years, had lamellar cataract in each eye with nystagmus and a very high degree of strabismus convergence. An iridectomy was performed on each eye and the left internus tenotomized. The patient was not seen again for fifteen years, when he had a milky cataract in each eye and discission was successfully performed. Two years later a secondary membrane had formed in the left eye and a cyst sprang from the lower and inner angle of the iris, measuring 5mm. transversely and extending into the anterior chamber so far as to obstruct the lower half of the pupil. An incision was made in the corneo-scleral margin and the cyst removed with a piece of the iris. The vision was good for some time, but there is now a slow progressive degeneration going on.

Discussion.—Dr. C. F. Clark, of Columbus, O., referred to two cases he had seen, one of congenital cyst and the other probably traumatic. In the latter case he had operated by simple puncture and there had been no return.

Dr. Dudley Reynolds, of Louisville, Ky., reported three cases, one of which had been operated upon by puncture, which was followed by panophthalmitis.

Experiences with Operations for Secondary Capsular Membrane.—Dr. J. M. Ray, Louisville, Ky. (This paper will appear in full in the August OPHTHALMIC RECORD.)

Discussion.—Dr. Thompson looked upon the secondary operation as a much more dangerous one than the first operation for cataract.

Dr. John E. Weeks, New York, stated that in his private cases he performed the operation in at least 95 per cent and in the hospital in at least 60 per cent of all his cataract cases. He had three cases out of 300 where the vision had not been as good after as before the secondary operation, but had never lost an eye. He thought that infection could be prevented by having sterile instruments, an aseptic cornea and by sealing the wound afterward by means of the actual cautery.

Dr. Wm. H. Wilder, of Chicago, endorsed the position taken by Dr. Weeks, and added that he always operated in a dark room with an assistant to focus the light from a strong Argand burner directly on the cornea.

Dr. Sam'l Mitchell, of Hornellsville, N. Y., also operates in nearly all cases, and Dr. Hawley stated that he always operated in a dark room, frequently performing his operations at night.

Dr. C. H. Williams, of Boston, said that he always uses the Weeks curved needle knife, and he had found the use of the small electric light of considerable service.

Dr. Leartus Connor, of Detroit, also operates early because the capsule is more readily cut than at a later period, and there is consequently less tension upon the ciliary body.

Report of a Case in which Both Eyes were Lost from Intraocular Hemorrhage after Cataract Extraction.—Dr. A. R. Baker, Cleveland.—Mrs. Y., aged 63 years, general health good, mature senile cataract in both eyes, and in every way an apparently favorable case for extraction. The first operation was a simple extraction, and everything went well until the sixth day, when she complained of pain and inspection showed that intraocular hemorrhage had occurred, irido-cyclitis followed and it became necessary to enucleate in order to relieve the pain. One year later the second eye was operated upon, a preliminary iridectomy being performed five weeks before the extraction. Every conceivable precaution was taken to avoid any risk of hemorrhage and the operation seemed to be perfect. Within an hour, however, the patient screamed with pain, and on removing the bandage it was found that the entire contents of the globe had been thrown out, and the globe looked as if it had been grasped tightly in the hand and squeezed; even the retina was extruded. There was no appearance of blood.

Dr. Baker suggests that in cases where one eye has been lost by intraocular hemorrhage, the other be operated upon after the old method of reclination.

Discussion.—Dr. Thompson stated that twice in his life he had had similar experiences, and other cases were reported by Drs. S. D. Risley and Dudley Reynolds.

At the close of the meeting Dr. Wilder exhibited a new instrument for use in ectropion operations.

Dr. W. M. Sweet, of Philadelphia, exhibited an apparatus for the detection of foreign bodies in the eye by means of the X rays, and also a special forceps for the removal of such foreign bodies as bits of copper.

Dr. Cassius D. Wescott, of Chicago, exhibited a pair of spring scissors, which may be worked by either hand, for use in iridectomies, tenotomies, &c.

Dr. C. R. Holmes of Cincinnati, gave a demonstration of moist specimens to show the relations of the accessory sinuses to the orbit.

The Significance of Certain Rare Forms of Ametropia.—Dr. S. D. Risley, Philadelphia. (This paper will appear in full in the August OPHTHALMIC RECORD.)

Astigmatism After Cataract Extraction.—Dr. C. F. Clark, Columbus. Dr. Clark had analyzed his own cases of cataract extraction and compared them with the cases reported by Lippincott and by Pfingst. He exhibited a number of charts and diagrams, showing the variety and degrees of astigmatism that occur after these operations and compared the results of the simple with the combined extraction.

Management of Cases of High Anisometropia.—Dr. Edward Jackson, of Denver. Of 1,000 consecutive cases of ametropia requiring correction, Dr. Jackson found 107 cases of anisometropia, forty-six of which were of high degrees. From the analysis of these cases he concludes that every case must be the subject of careful individual study and the selection of the lens for the worst eye at first tentative. In a few cases capable of nearly equally acute vision in both eyes, the more hypermetropic, or less myopic eye, should have its correcting lens for distant vision and the other eye the lens which will adapt it for vision at about ⅓ of a meter. In some cases we must be content with the full correction of the better eye and the adjustment to the other of a lens that will enable it to give the most aid in binocular vision. In cases of very high myopia in one eye with the other eye but slightly myopic or hypermetropic, the removal of the crystalline lens from the myopic eye would be proper, and if ever corneal incision comes into practical use to modify high astigmatism it will be proper to apply it first to cases of high anisometropia.

Surgical Treatment of High Myopia.—Drs. H. V. Würdemann and W. R. Murray, of Milwaukee. The authors describe two cases of high myopia which were operated upon, the result in both cases being satisfactory.

Considering the subject of the surgical treatment of myopia they recommend that it should be limited to cases over 12.D who suffer great inconvenience from their correcting lenses. The ideal cases for operating are those of 17 to 18.D. Second, the operation is mainly indicated with young adults. Third, cases having active disease and changes in the ocular structures, such as progressive myopia, chorioiditis, fluidity of the vitreous or detachment of the retina, are not applicable. Fourth, the dangers of operative interference are more than counterbalanced by the results to be achieved, which are mainly increase of visual acuity and of the visual field, and more extended use of the eyes which accompanies diminishment of the refraction.

The literature of high myopia is extensively reviewed and a table of statistics shows the proportion of myopic cases over 10.D to be only 0.54 out of a total number of 5,000 eyes examined under mydriatic.

Discussion.—There was an almost unanimous opinion that high degrees of anisometropia should be corrected, though it was suggested by Drs. G. C. Savage (Nashville) and Lippincott (Pittsburg) that full correction should not be given at once but made gradually in order to save the patient the discomfort attending a sudden change in his retinal images.

Dr. S. D. Risley (Philadelphia) strongly advised against the operative treatment of myopia, and Dr. Timbermann cited the experience of Von Hippel, who had operated upon 114 cases, with good results in nearly all, and stated that of 100 highly myopic eyes let alone there will be just as many go to the bad as would occur in 100 cases operated upon.

The National Recognition of Eyestrain Reflexes.—Drs. Geo. M. Gould and Helen Murphy. The authors reviewed the text books of the various nations, and showed that there are but few slighting references to the effect of ocular conditions on the general system, and they made a strong plea for the recognition of reflex disturbances due to eyestrain.

The Papillitis Accompanying Brain Tumor.—Dr. Jno. E. Weeks, New York. Dr. Weeks reviewed at considerable length the literature upon this subject, and gave tables to show the relative frequency of papillitis in tumors of various proportions of the brain. He considers papillitis of little value as a means of localizing the tumor, and the size of the tumor appears to have no bearing on the development of the neuritis.

Discussion.—The discussion seemed to show that there may be many cases of brain tumor without papillitis, and some cases in which papillitis may appear for a brief period and then disappear, so that, unless examined at a favorable time, it would be overlooked. Cases of papillitis accompanying brain tumor were reported by Drs. Gifford, Williams, Huizinga, and Clark.

Dr. Alvin A. Hubbell (Buffalo) stated that he believed most of these cases of choked disk to be inflammatory in character, but Drs. Weeks and Gifford had both examined cases in which the evidence seemed to point to simple mechanical œdema.

The Value of Cycloplegia in Optometric Examinations.—Dr. C. M. Culver, Albany. A study is made of 1,000 cases seen in private practice, where cycloplegia was purposely produced for the sake of optometric examination. If more hypermetropia or less myopia was found by the cycloplegic examination it was considered a "gain," and if less hypermetropia, or more myopia, was found, it was called a "loss." Considering all ages, from five to fifty-five years, a gain was noted in 80 per cent, a loss in 4 per cent, and 16 per cent showed neither gain nor loss. The average gain in the 1,000 cases was 0.625 D, while the average gain in persons between 40 and 55 was nearly 0.50 D. It seemed that a 2½ per cent solution of homatropine hydrobromate provided a trustworthy cycloplegia as effective as atropine.

Discussion.—Dr. Edward Jackson considered homatropia a reliable mydriatic, and thought one of the greatest gains in the use of cycloplegics was in measuring the astigmatism and in showing the exact amount of anisometropia, rather than in bringing out latent hypermetropia.

Dr. H. Moulton (Fort Smith, Ark.) called attention to the value of scopalamine, and Dr. Randall (Philadelphia) stated that he had been impressed by the superior value of hyoscyamine.

Concerning the Bacteriology of Acute Catarrhal Conjunctivitis.—Dr. C. A. Veasey, Philadelphia. As a result of Dr. Veasey's examination it was found that in the vicinity of Philadélphia the most frequent cause of catarrhal conjunctivitis is the pneumococcus of Fränkel, that occasionally it is produced by the Koch-Weeks bacillus, and that the clinical manifestations of each are so similar in severe cases that it is impossible to distinguish between them without a bacteriological examination.

Discussion.—Dr. Wm. H. Wilder thought that it was quite possible that this organism of Fränkel is frequently present in the conjunctival sac when we do not suspect it, just as it is present in the mouth so commonly without causing any trouble.

Dr. John E. Weeks believed that this was so, but was surprised that the small bacillus had not been found more frequently in Dr. Veasey's examinations.

Mucocele of the Newborn.—Dr. C. W. Hawley, Chicago. This is a report of six cases of dacryocystitis occurring in infants. All were treated by the ordinary surgical measures of opening the abscess and securing drainage through the regular channels.

Discussion.—Dr. H. M. Starkey, Chicago, mentioned the scarcity of reference to such cases in the literature, and Drs. Wilder, Hale, Hubbell, Bennett, and Wescott all reported cases occurring in their practice.

The Phorometer or Maddox Rod, Which?—Dr. Alvin A. Hubbell, Buffalo. The author has made a comparative examination of the muscles in 140 cases, using the Maddox rod and the Stevens phorometer. In thirty-six cases the results were the same by either test. In heterophoric cases there was less heterophoria by the phorometer than by the rod test in seventy-one, and in eight there was more. The opposite form of heterophoria was shown in ten cases, while in seven of the orthophoric cases by the rod there were exophoria and right or left hyperphoria by the phorometer. Dr. Hubbell concludes that in view of the fact that by the rod test there is introduced absolutely no extraneous impulse to muscular contraction, and as its findings are in a large majority of cases equal to or in excess of those of the phorometer, it is a more precise and trustworthy guide in daily practice than the phorometer.

Discussion.—Dr. Lucien Howe did not believe that either of these methods could be trusted implicitly, and Dr. G. C. Savage urged the value of a monocular phorometer, which he exhibited to the society.

Adjournment.

NEWS ITEMS.

Personals and items of interest should be sent to Dr. Frank Allport, 92 State St., Chicago.

Dr. G. C. Savage, of Nashville, Tenn., has been elected Secretary of the Medical Faculty of Vanderbilt University.

Dr. H. O. Reik was elected Reporting Secretary of the Medical and Chirurgical Faculty of Maryland.

Upon February 14th, Prof. Liebreich celebrated his sixtieth birthday.

Dr. Witold-Narkiewicz-Jodko, formerly Professor of Ophthalmology at the University of Warsaw, is dead.

Dr. A. E. Bulson, of Fort Wayne, Ind., was elected treasurer of the Indiana State Medical Society, which held its semi-centennial meeting in Indianapolis June 1st and 2d.

Dr. William Oliver Moore has been appointed consulting ophthalmic and aural surgeon to the Flushing Hospital and Dispensary, Borough of Queens.

Justin McCarthy, the celebrated Irish historian, had a cataract removed from his right eye, June 8th, at the Royal Eye Hospital in London, and is now progressing satisfactorily.

Dr. E. T. Painter, an ophthalmologist and otologist of Redlands, Cal., has been compelled to retire from practice on account of ill health. His practice has been assumed by Dr. D. W. Hunt.

At the twenty-third semi-annual meeting of the South Californian Medical Society, held recently at San Diego, Dr. H. Bert Ellis, of Los Angeles, was elected president.

Society of Washington Ophthalmologists and Otologists.—At the annual meeting for the election of officers recently held in Washington, D. C., the following were elected: President, J. H. Bryan; vice-president, Wm. H. Wilmer; secretary, E. O. Belt; Swan M. Burnett, chairman executive committee.

Our European exchanges mention the silver wedding celebrations of the Dr. Duke Charles Theodore, of Bavaria and his wife, the Princess Marie, of Braganza. This titled confrère is a specialist in ophthalmology at Munich, and maintains a free clinic for the poor, dispensing charity among the needy patients with a lavish hand.—*Journal of American Medical Association.*

The Ophthalmic Record extends its deepest sympathy to Dr. B. E. Fryer, of Kansas City, on the loss of his wife, April 7th, after a short illness.

We are delighted to learn that Appleton & Co., have produced a second edition of Fuchs' Text-Book of Ophthalmology. It has been translated and revised by Dr. Duane of New York. The book should be owned by everyone who desires to follow the best and most advanced thought in ophthalmology.

A new ophthalmological society has sprung into existence in Moscow, the opening address being delivered by Prof. F. A. Jewezki, the subject being "The Development of Ophthalmology in Russia." The president is Prof. A. A. Krjukow, and vice-president, Prof. Jewezki.

We regret to record the death of Charles Bader, Consulting Ophthalmologist to Guy's Hospital. He died February 13th in England. Mr. Bader was a German by birth, but came to London in 1861. He was one of the most prominent ophthalmologists in England, and died at the age of seventy-two years.

The Royal London Ophthalmic Hospital.—Their royal highnesses the Duke and Duchess of York have consented to open the new building of the Royal London Ophthalmic Hospital on Monday, June 26th. This hospital was founded in 1804, and is generally known as Moorfields Eye Hospital. The new hospital is in City Road, about one mile from the present site in Blomfield street. Provision is being made for forty additional beds, and for a much larger out-patient department. The hospital at present relieves over 400 cases a day.

THE following resolutions were presented at the last meeting of the Pennsylvania State Medical Society, by Dr. Louis J. Lautenbach, and passed by the Society. These same resolutions were presented at the general meeting of the American Medical Association at Columbus. We have just been informed that the resolutions were passed at Columbus by the American Medical Association, but whether such information is true or not, we are unable to positively state. The resolutions are as follows:

Resolved, That it is the opinion of the Medical Society of the State of Pennsylvania, that opticians are not qualified by their training, nor are they legally qualified, to perform the work of the oculist, and they should not be the consultants of regular physicians. Further it is

Resolved, That all physicians are requested to call their brother physicians in consultation thus discountenancing the growing pretences and assurances of the optician and his brother, the graduate optician, or, as he is beginning now to call himself, the "Ophthalmotrician."

HETEROCHROMOUS EYES.—"In a family I am attending," writes a correspondent, "there are three children. In the eldest and youngest (who are boys) the right eye is hazel and the left eye blue. In the second child (who is a girl) the right eye is blue and the left hazel. The father has blue eyes and the mother has hazel eyes." The condition recorded is uncommon but not extremely rare. Two forms of heterochromia are recognized by ophthalmologists—one, in which the eye only is particolored, a segment of the iris being of one color and the remainder of another color, a condition named "heterochromia unilateralis;" the other, in which as in this case the iris of one eye is different in color from that of the other, named "heterochromia bilateralis." The dark color of the iris in the Southern nations and in the yellow races, as in the Chinese, is due to pigment in the superficial cells and in the cells of the stroma. The blue iris chiefly in the Northern nations is due to the absence of pigment. Very dark irides are seen in the descendants of the Jutes in the Isle of Wight and, according to MM. Truc and Valude, in Bristol and in Hainault in Belgium, while the blue iris is not infrequent in Upper Italy, among the Basques, and even exceptionally in Morocco and Tunis. In France Topinard recognizes two zones, the northeast with light-colored or blue irides, and the southwest with brown eyes. It is not correct to say that all infants' eyes are gray at birth. We have seen them of a very dark color. It has been thought that eyes presenting a difference in color in their irides are not perfectly developed and that any operation upon them should be undertaken with some hesitation and reserve, but it does not appear that there are any statistics bearing upon the question. The influence of heredity on the color of the eyes has been shown to be marked. When both parents have blue eyes, or both parents dark eyes, about 95 per cent of the offspring have irides of corresponding color, but when one parent has blue and the other dark irides the number of dark and light irides in the children is about equal.—*London Lancet.*

THE meeting of the Ophthalmological Section of the American Medical Association in Columbus was, notwithstanding the intense heat, one of the largest and most interesting in its history. One hundred and thirty-three members registered, and quite a number of others were admitted to fellowship. One lady member was present, Dr. Mary Hollister, of Chicago.

Dr. Casey A. Wood officiated as chairman in his usual felicitous manner, and Dr. C. H. Williams, of Boston, performed the office of secretary with gratification to all. The Section was very fortunate in being able to retain the services of Dr, H. O. Reik, of Baltimore, as official stenographer, a position which he has filled for many years with perfect satisfaction to everyone. There is a rumor that Dr. Reik may not be able to act as stenographer much longer, owing to pressure of professional practice. We sincerely hope that this rumor is unfounded, as it would be almost impossible to fill his place. A stenographer for the Section must not only be an expert stenographer, but a scientific ophthalmologist, both of which qualifications Dr. Reik possesses.

The Section was disappointed in not hearing the addresses of Landolt, of Paris, and Dr. Oliver, of Philadelphia, both of which were looked forward to with much pleasure.

Those persons who were not only interested in ophthalmology, but otology as well, were delighted to find the two Sections working together in the same building and in close contact. We would suggest that this is an arrangement that should always be made, as it affords eye and ear surgeons an opportunity of taking advantage of both sections.

Mr. E. B. Meyrowitz, of New York, presented an unusually attractive display of instruments in the same building.

The new officers elected were Dr. H. V. Würdemann, of Milwaukee, for president; Dr. C. F. Clark, of Columbus, for secretary. Both of these gentlemen are too well known to require any eeoniums from the RECORD. They are both well worthy of the honors, besides being gentlemen with many warm friends, who extended to them their hearty congratulations and best wishes for the Section work in Atlantic City next year.

The usual dinner for the Ophthalmic Section was held at the Columbus Club, and was a delightful affair in every respect. At the request of Dr. Wood, Dr. Lucien Howe, of Buffalo, acted as toastmaster, and those acquainted with Dr. Howe's natural eloquence, ready wit and affability, can imagine how well he performed the function. The toasts were responded to by Dr. Wood on the "Section of Ophthalmology"; Dr. Reynolds, on the "Ex-Presidents"; Dr. J. E. Brown, on the "City of Columbus;" Dr. C. H. Williams, on the "Ophthalmology of the Past"; Dr. J. A. White, on "Southern Ophthalmology"; Dr. Edw. Jackson, on the "Ophthalmology of the Future"; Dr. Würdemann, on "Ophthalmic Journalism"; Dr. S. C. Ayres, on the "Future of the Ophthalmic Section." Songs by Drs. Marble, of New York, and Walter, of Chicago, and by the Section in general, interspersed the program from time to time.

Upon the announcement that the liquid refreshments for the Section were furnished by the chairman, Dr. Wood, the gentlemen seated around the table instantly arose and vociferously and enthusiastically sang, "For He's a Jolly Good Fellow." Dr. Risley wound up the dinner by making a little speech, and in closing proposed a vote of thanks to the toastmaster, which was responded to with great enthusiasm.

One of the pleasantest features of the meeting was the little lunch of the Ophthalmic Record, which was given in the Columbus Club Thursday noon. It was attended by Drs. Wood, Weeks, de Schweinitz, Savage, Hubbell, Würdemann, Gifford and Allport. The affairs of the Record were discussed over the lunch, its financial condition presented, and it was the unanimous sentiment of the editors and collaborators that the Record should be made even more interesting and instructive than ever before, and that the expense of so doing should be made a matter of secondary consideration. In view of this fact, we desire to enter a plea that every regular reader of the Record should try to find one new subscriber.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

Volume VIII. CHICAGO, AUGUST, 1899. No. 8. NEW SERIES.

ORIGINAL ARTICLES.

UNCOMMON EXPRESSIONS OF ETHMOID SINUS DISEASE WITH ITS OCULAR AND ORBITAL SYMPTOMS.*

DR. ROBERT SATTLER.
CINCINNATI, O.

The concealed location of the ethmoid, its fragile structure and numerous pneumatic cells, together with its close anatomatical relationship to the inner wall and margin of the orbit, probably explain the fact that the *secondary* lesions (which so commonly appear in or near the region of the lachrymal sac or of the fronto-nasal canal with empyema of one or both frontal sinuses) may be present long before positive intra-nasal or orbital symptoms point to this region as the *primary* seat of the trouble.

If this explanation is accepted, it partly excuses a not infrequent oversight that the lesion is not at once recognized. It also accounts for the unsatisfactory or entirely negative results of treatment, because this is concerned mainly with attempts to relieve the more common and always more conspicuous associate manifestations.

It is a clinical fact, in certain cases at least, that the local symptoms of the secondary lesions, for a longer or shorter period, completely overshadow a more positive declaration of the original lesion of the ethmoid bone and its cells. It has happened to me, as it has to others, that in an effort to relieve these secondary lesions through radical surgery, pathological disclosures of the ethmoidal cells were made, unlooked for,—because of the absence of all positive clinical data.

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*Read before the Section on Ophthalmology American Medical Association, Columbus, O., June, 1899.

Among more common clinical features, persistent fistulæ are observed, in and about the region of the tear-sac, which are due to external osseous perforation with sub-periosteal dissection and perforation of the soft parts. These may appear so far away from the seat of the original lesion in the ethmoidal cells that this would at first not be associated as offering a rational explanation for the fistulous tracts and their remote outlets. The same may be said of hyperostosis and periostosis of this region along the inner margin of the orbit and certainly for abnormal thinning of the bone with erosion and sequestration.

A less common attendant, and one not to my knowledge referred to, is *the concealed internal burrowing of the contents of the choked sinuses and their spontaneous emptying, not into the nose,* (*for that is a frequent termination,*) *but into the adjacent maxillary sinus. This must be looked upon as a much more rare occurrence.* It as often exists without the more frequent and conspicuous external complications referred to. It may also happen that a pronounced lesion of the maxillary antrum which demanded surgical interference is found to depend upon or to be associated with, a lesion of the ethmoid cells.

The few cases under my observation which confirm this statement are here only incidentally referred to, to illustrate another interesting and unusual feature. We occasionally meet with rarefaction of the walls and a dilatation of the maxillary sinus which we are unable to explain. It would appear that the explanation must be found in this spontaneous discharge of the choked cells of the ethmoid into the maxillary antrum. In consequence of this there is excited within the sinus a low grade of inflammatory activity of the mucous lining, with formation of granulation tissue in excessive quantity, and which by its steady growth is compressed. Exerting pressure in all directions, rarefaction of the walls results amidst a wholly latent course.

In other cases, the original ethmoid lesion, with its external bone-perforations and burrowing pus-trails, persists, while it unexpectedly assumes a less annoying expression, or is apparently much more favorably influenced by the treatment resorted to. The infrequent secondary maxillary sinus complication which has throughout shown a latent course, discharges its contents into the nose or mouth and the granulation-tissue undergoes gradual absorption or dessication. When finally, radical surgery is resorted to, for the local tenderness, with occasional paroxysmal outbursts of severer suffering without other tangible evidences on the part of the skin or bone. Persistent neuralgia of the naso-ciliary and supra-orbital region is extremely rare, but is occasionally met with. In some cases even during the sub-acute exacerbations of the pathological process within the ethmoid, the margin and inner wall of the orbit is sensitive on palpation. Painful points or protrusions of the bony wall may be discovered. At the same time, œdematous drooping of the upper lid with venous engorgement and even chemosis of the ocular conjunctiva are almost constant attendants. Constitutional symptoms may be absent. If these symptoms come and go and lateral displacement with protrusion of the eye is added, it is strongly suggestive of a lesion of the ethmoid.

The symptom of lateral displacement of the eye or its partial or complete dislocation is a variable one. If the anterior cells are choked with pus and mucous and if this is in part discharged through the external fistulous openings, or, along the internal ones spontaneously into the nose and, in exceptional instances, into the maxillary sinus where it is again incarcerated, the symptom is present only during this period for a longer or shorter time. Among the aged and in particular in syphilitics, when a chronic lesion without external ethmoid disease is undertaken and the fistulous tracts opened with the frontal sinus, anterior and middle ethmoidal cells exposed for inspection,— the maxillary sinus,— and this is the surprising feature — is found empty, but enormously dilated. It must be admitted that positive intra-nasal evidences of disease of the anterior cells or those adjacent to the orbit and fronto-nasal canal are as often absent. Syphilis, both congenital and as a late and inveterate manifestation of acquired syphilis in persons additionally predisposed to intra-nasal disease, is almost uniformly present as the immediate and remote cause of such lesions. It can never be entirely excluded.

As to the orbital and ocular symptoms we must at the outset admit their transitory character. If complications of the frontal sinus are present, the assymetry of the nasal or inner half of the orbital opening will be in evidence, and fistulous openings and tracts in the vicinity of the tear-sac or at some distance below, even along the inferior border of the orbit, with œdema and dusky venous discoloration of the soft parts, are observed. If these symptoms are absent, the other evidences on the part of the eye or orbit which may point to a lesion of the ethmoid are meager. Among the latter are complaints of perforation that may be latent, and perforation of the thin osseous wall of the orbit may take place so slowly, that the thick, ropy contents are forced under the periorbita. In these cases, exophthalmos is a prominent symptom. The age of the patient, the apparently solid tumor which can be felt at the inner and under the upper orbital margin, together with the marked proptosis, rather point to a malignant neoplasm.

An illustration of this point came under my observation several years ago. In the case of an old woman, a solid malignant tumor was thought to be present. The eye was dislocated downward and forward. The operation revealed a chronic erosive lesion of the ethmoid of the anterior and middle cells.

In another case, a lad was brought to me with marked exophthalmos, inflammatory œdema of the lids, and in conjunction with what was supposed was a decidedly cachetic appearance. The diagnosis of sarcoma of the orbit was made and radical interference was not advised. Subsequently, spontaneous discharge of the distended sinus took place through the nose, and the boy recovered.

The following brief report will further illustrate the main ocular and orbital symptoms referred to. The patient was sent to me by his family physician who had treated him for other syphilitic (?) manifestations and assumed that the lesion of tear-sac and nasal duct was due to the same cause. The assymetry of the orbital opening was pronounced. The skin over the frontal sinus and on the side of the nose was red and swollen. The upper lid drooped and the ocular conjunctiva was angry, due mainly to the constant influx of the discharge. Fully three-fourths of an inch below the inferior bony margin of the orbit and on the side of the nose and cheek, was a fistulous opening or several fistulous areas around which the skin was atrophied and glossy. A probe at once disclosed the real nature of frontal-sinus complication.

An exploratory operation was at once advised. It disclosed a pronounced lesion of the sinus frontalis, with great increase of its lumen. It was filled with pus and granulation-tissue. The bony walls were greatly thickened, the bone very vascular. Complete exploration for inspection and treatment disclosed extensive implication of the ethmoidal cells. Lateral displacement without diplopia; but proptosis, probably due to inflammatory œdema of the cellular tissues of the orbit, was present. Vision was normal, as were also the other functional tests.

After thorough exposure and removal of all pathological products, an opening was made into the nose for drainage, and the frontal sinus and cells packed with iodoform gauze. Under active inunction, followed by large doses of iodide of potash and locally antiseptic irrigation and packing, improvement occurred and the wound finally healed with little or no deformity. A feature of the greatest persistence was the presence of fistulous tracts in the vicinity of and far below the tear-sac.

EXPERIENCES WITH OPERATIONS FOR SECONDARY CAPSULAR MEMBRANES.*

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Scarcely of less importance than extraction of the opaque lens are the operations for secondary capsular membranes. To submit a patient to the restraint necessary for the primary operation, obtain useful vision, and then by as apparently a simple procedure as discission to destroy not only what we have gained by the first operation, but all possibilities of future seeing, is a calamity much to be deplored.

The very interesting study of this subject recently given by Dr. Knapp doubtless attracted much attention, coming from such high authority and from one who has had such opportunities for watching his results, his conclusion that the operation has been in his hands uniformly successful would seem to have finally settled the question. When, however, we begin a study of the subject from all sides, we find much diversity of opinion as to the dangers from the operation.

Landolt states that "the dangers of these operations are known to all." Panas remarked that "for twenty years he intervened a second time only when the acuteness of vision has been insufficient to permit the patient to go about." Gayet, at the *Heidelberg Congress*, stated that it was "always uncertain, often useless, sometimes very dangerous." McKeown recently wrote "these operations are rightly not regarded with favor."

The various procedures that have been undertaken in the primary extraction to do away with the possibilities of a capsular thickening are sufficient proof of the fact that it is often followed by disaster.

The Pagenstachers and their followers remove the lens in its capsule. Foerster, DeWecker and others advocate removal of the anterior capsule, while most of us lacerate the capsule freely in its center, hoping that retraction will take place in the anterior layer and open up a space corresponding with the pupillary area. Knapp makes a peripheral incision and, as it were, courts a secondary operation.

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* Read before the Section on Ophthalmology, American Medical Association, Columbus, O., June, 1899.

The frequency with which this operation is made varies very much in the hands of different operators, some either being satisfied with lessened acuity of vision, or their method of dealing with the capsule at the time of extraction becomes a factor in the occurrence of secondaries. For instance, Foerster in 100 cases had 11 per cent.; Haab in 406, 26 per cent.; Knapp in 300 over 60 per cent. These results show the relative proportion of secondaries with the three methods most in vogue in dealing with the capsule at the time of extraction ; namely, removal of anterior capsule by Foerster, central laceration by Haab, peripheral capsulotomy by Knapp.

No method seems to accomplish the end desired in all cases. In removing the lens in its capsule the surgeon often fails because the capsule is ruptured during the manipulation and the lens escapes, leaving the entire sac still attached to the zonule. In removal of the anterior capsule a small percentage of cases show thickening and wrinkling of the one layer of capsule remaining. By no forceps yet suggested does it seem possible to grasp and bring out only the anterior layer. Piersol says " the capsule is considerably stouter in the center of its anterior surface, and thinnest at the center of its posterior segment." Therefore the escape of vitreous must be great by this method.

Becker's experiments on the behavior of the capsule when lacerated is quoted by most writers. He found from experiments on pigs' eyes that if the capsule be lacerated vertically with the ordinary Graefe cystotome that a flap is formed the apex of which corresponds with the point of insertion of the instrument, and thus when the lens is extruded the flap of the anterior capsule turns upward and becomes caught in the incision. If the capsulotomy incision be horizontal the triangular flap has its base laterally and therefore the danger of its incorporation in the corneal wound is lessened. I recently tried several similar experiments, and convinced myself that if the cystotome used has a sharp edge, no capsule flap is formed, and that instead of the cut edges becoming everted, as stated by Stricker, or curling under as is claimed in a recent article, there is simply a gaping the result of the inherent elasticity in the capsule.

Peripheral capsulotomy must fail of its intent in many cases. It is advised that an incision 6-7 mm. in extent be made along the margin of the lens. This incision is insufficient to allow the average sclerosed senile lens with an equatorial diameter of 9 mm. to escape without farther laceration in other directions. I have seen this occur in the shape of a rent vertically through the anterior capsule clearly visible a few days after the extraction when the anterior chamber became completely reformed.

It naturally follows, therefore, that whatever method be used, we are in a greater or less percentage of cases confronted by the necessity of after interference, should useful vision be gained.

The character of the after operation will depend on the nature of the secondary membrane. If it is purely capsular, with small bits of lens material in its meshes, some form of knife-needle appears to be the most useful instrument. If, however, in addition to the capsule, there has been a deposit of inflammatory material, the after formation can not be dealt with in this manner, but the double needle operation or scissors must be used. I have had no experience with the method of De Gama Pinto and Noyes in which the membrane is reached by a puncture through the sclera behind the iris and divided from this direction. The dread we all have of ciliary wounds will deter us from a resort to such a method until convinced of its greater value.

In a paper recently presented to the *Western Ophthalmologic and Otolaryngologic Society*, I recorded the failures I had met with in a series of 141 extractions. Of this series 53 cases presented themselves for secondary operations. In 53 eyes, sixty-two operations were done, 5 cases requiring two operations before a sufficient opening was obtained, and in 2 cases, three attempts were made to accomplish the desired result.

The knife needle was the instrument used in 43 cases, the double needles in 9, operation with hook in 4, Graefe knife in 3, DeWecker scissors in 1. In these 53 cases two eyes were completely lost as a result of the secondary operation. In several others, more or less serious and annoying sequela resulted. The most interesting of the cases were as follows :

E. B. R., age 79, extraction with iridectomy, central capsulotomy, March, 1896. When discharged vision = 6/18 w +10Ds. Ten months later he presented with vision reduced to 3/60—. Oblique illumination showed a thickened capsule with no synechia, pupil dilating well with homatropia. Several thickened striæ of opaque capsule, but the membrane did not appear tense or drawn toward the former corneal incision. The parts around were washed, the eye was irrigated with bichloride 1-3000 and a moist bichloride dressing applied. Several hours later, after dilating the pupil and washing the eye with boric acid solution, a discission was made with Knapp's knife needle. First a horizontal cut and then a vertical one through the lower half, that portion corresponding with the coloboma was not disturbed. No aqueous was lost, and the trauma was not great. The knife needle had been wiped with sterile cotton after dipping it in hot water and then immersed in alcohol during the time required for the cocaine anæsthesia. The first night the eye pained, and the following morning the bandage was removed. Considerable circumcorneal injection was present and the iris was slightly congested. Atropia instilled. The ciliary injection and pain continued during the day. Iced cloths were resorted to for relief of the pain. On the second day a slight cloud was noticed in the vitreous at the seat of the needle puncture. This rapidly enlarged until the iris became involved and a purulent hyalitis with secondary infection of the iris led to a pan suppuration. I watched carefully the development of the infection, and its growth at the seat of vitreous puncture reminded one of the development of organisms on a culture media. I am certain that the inoculation was made with the needle and that the conditions were the same as we see occurring in laboratory experiments.

The infection was unquestionably at the seat of puncture, and the area of the original corneal wound was not invaded. Therefore I believe that the source of infection was introduced at the time of operation and not by exciting action in organisms remaining dormant in the eye from the time of the primary operation.

CASE II.—*While not disastrous as the one just reported, had in its early appearance a similar outlook.* Mrs. I., age 85, was operated upon by iridectomy and central crossed capsulotomy with the cutting cystotome in June, 1898. An iritis presented on the 10th day, and while never severe or painful, was two weeks in subsiding. Vision five weeks after extraction was 4/60. In September, 1898, I found a membrane quite tensely stretched across the pupillary area and coloboma. In addition to the capsule, lymph had been added by the iritis. The eye was prepared as at the time of the original operation. A sharp knife needle was dipped in hot water and wiped well with sterile cotton, and immersed for ten minutes in alcohol. Holocain was used as the anæsthetic. The pupil had failed to dilate but partially, due to adhesions to capsule from the former iritis. Under oblique illumination a T-shaped opening was easily made in the membrane. No aqueous was evacuated. She complained of considerable pain during the first night. The nurse removed the bandage at my request and applied hot compresses, and when easy the bandage was reapplied. The following morning, when I inspected the eye, I found much ciliary injection, a small gray dot denoted the site of the corneal puncture, and extending from this across the anterior chamber to the upper margin of the divided capsule was a grayish yellow line resembling pus. The eye was very sensitive and tender on palpation. Atropia was instilled and the bandage reapplied. In twelve hours again inspected. The deposit in the anterior chamber had increased, and in addition to the string extending from the cornea to the capsule there was a well defined onyx. This condition did not materially change for four days, then absorption began, but all traces of this deposit did not disappear until the eighth day. The ultimate result was V=6/15+ w +15Ds +3Dc ax 15°. In the early stage this condition was alarming, and I was of the opinion that the eye was infected and suppuration would be the outcome.

De Gama Pinto encountered two cases in 326 secondary operations similar to the one reported above, yet both eventually recovered entirely. Knapp (Norris and Oliver), says this condition is rare, but that he has encountered it a number of times and thinks it due to vitreous adhering to the needle puncture.

CASE III.—*Presents another phase of secondary operation.*

Ruth R., colored, age 71, extraction March, 1896. She squeezed the eye just as the section was completed, the lens was forced out and fell on the cheek; with it came the iris and a quantity of vitreous, the muscular effort rupturing the capsule horizontally. The lower portion formed a sac containing a mass of lens material. V 6/60 after subsidence of irritation. I attempted with Knapp's knife needle to make an incision in the opaque mass that filled the lower half of the pupil. When the vertical slit was attempted the membrane yielded slowly before the cutting edge of the needle, and when I withdrew the knife a retinal detachment came forward into the pupillary space. I believe this accident due to the use of a knife needle on a tough membrane in an eye where vitreous had been lost. I have invariably noticed more reaction in secondary membrane operations in eyes where vitreous has escaped at the time of the original extraction.

An important complication noticed after secondary operations is illustrated in the following case:

Mr. S., German, left eye, operated upon by simple extraction, May, 1894. The capsule was cut in a crossed manner through the pupillary area. Recovery without incident with a slightly misplaced pupil, the base of the iris evidently being adhered to the corneal incision. Five weeks later his vision was 6/60, high astigmatism being present and several opaque lines of thickened capsule in pupil space. Two months later the antigmatism had lessened but the vision had remained the same. I made a secondary operation with the knife needle. An incision was made through the membrane under oblique illumination through the long axis of the pupil, and this was joined by another incision nearly horizontal. He complained of pain during the first night. The following morning I removed the dressing and instilled atropia. Later that afternoon I was summoned to see him and found him in great pain, with circumcorneal injection and T +2. He was given a hypodermic of morphine and an eserine solution ordered to be used every hour. The following morning the tension was still +2 and the cornea steamy, pains but little relieved. V=light perception. I immediately attempted an iridectomy after making the corneal incision, but it was impossible to grasp the iris with any forceps I had in my operating case. The iris would give and sink backward when an attempt to grasp it was made. I failed to have a hook in my operating bag. Some vitreous escaped from the corneal wound; this was cut off and the eye dressed. The pain subsided and the eye healed kindly, but the vision obtained later was never as good as that present at the time of the capsule operation.

The literature on the subject of Glaucoma after discission does not seem to be extensive. Bowman was the first to mention it. In 1865 he wrote "Glaucomatous tension is particularly apt to come on after needle operations following flap extraction where the pupil is small." Further he believed in the majority of such cases the tension could be relieved by a paracentesis with the broad needle.

Collins found glaucoma in only .64% of 1405 extractions. He asserts that the exciting cause of the tension is an adhesion of the lens capsule or hyaloid to the extraction scar.

In 1895 Knapp had seen 15 more or less severe attacks of glaucoma following discission about 1% of all cases. These attacks came on after operation where extensive splitting of the membrane and deep penetrations of the knife were made, or where much cortex had remained and become swollen. He believes the attacks due to traction on the ciliary processes. Some cases were cured by eserine and morphine, but the majority required iridectomy.

The promptness with which the case here reported yielded to a paracentesis shows that operative interference in the form of paracentesis, iridectomy or sclerotomy offers a quick relief in such cases.

Still another result of an operation for after cataract is presented by the case of Miss T., age 56. She was operated upon in November, 1894, without incident, central capsule laceration. In four weeks she went home. Vision=6/12. One year later she returned with vision reduced to 6/20. A striated opaque capsule filled the pupillary space. I attempted to split the capsule with the knife needle, but the thickened striæ were pushed in front of the cutting edge and when the needle was withdrawn it sprang back to its former place. No benefit followed. Ten days later two needles were introduced, one with a cutting edge, one held the membrane and the other severed the thickened bands. Much reaction followed. There was ciliary injection and tenderness for six weeks and a number of vitreous opacities. V=3/60. Later a low form of iritis with ciliary injection and tenderness began first in one eye and then in the other. When last seen the vision was 6/60, vitreous contained numerous floating particles, and the fellow eye showed complete posterior synechia with plastic deposits on the capsule of a cataractous lens.

A study of these cases seems to show that the operation for secondary cataract is far from being an operation devoid of danger. I recognize the fact that the larger the number of cases one has to draw from the more valuable becomes the deductions. Yet it seems that in a series of 141 extractions the immediate losses represented 2.84% of the cases, while of 53 of these cases presenting themselves later for secondary operations, 3.77% were lost.

The appearance of the capsule four to six weeks after the extraction generally gives some indication of the after formation. Many cases come from great distances for operation, and therefore some knowledge of the changes to take place and the possibilities of a needle operation would be valuable to the patient. The gain in visual acuteness is ,sometimes greater from the secondary than from the original extraction operation. Knapp in 70 secondary operations had an average vision of 6/35 before, and 6/15 after division of the membrane. If they have vision 6/20 or better and no dark striæ lattice work the pupil space, and the fundus is seen clearly with the ophthalmoscope, the possibilities of a secondary are remote. If, however, these changes are found, the sooner the membrane is divided after the eye is free of irritation following the extraction, the easier will be the manipulation and less the danger of complication.

THE SIGNIFICANCE OF CERTAIN RARE FORMS OF AMETROPIA.*

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When the illustrious Donders produced his inimitable treatise on the "Anomalies of Refraction and Accommodation" it seemed that he had set the boundaries in this field of research ; but subsequent experience has shown that his clear demonstrations established not a limit, but only

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*Read before the Section on Ophthalmology of the *American Medical Association*, held in Columbus, Ohio, June, 1899.

the principles which should guide us. The time allotted for the presentation of papers before the Section is too brief to permit a full discussion of the intricate problems introduced for solution by "the significance of certain rare forms of ametropia," I shall therefore present briefly the history of a few cases which will serve to illustrate not only the difficulties encountered in different groups of cases, but incidentally the principles which should control the surgeon in their treatment. I have always felt that it simplifies the management of refraction errors to accept, as the ideal standard for perfect vision, two healthy emmetropic eyes, with normal acuity of vision, and a physiological range of accommodation and convergence; to regard any departure from either of these factors as anomalous, and where symptoms of visual disturbance are present, to correct accurately the anomalous conditions. This I believe to be a rational procedure. That is to say, if ametropia exists, reduce it to emmetropia; if there is ocular imbalance, to determine carefully its nature and cause, and if possible correct it. When this is successfully accomplished, it will be found that a host of symptoms both local and reflex will disappear. If they do not it is then time to seek for some other origin for the visual disturbance.

CASE I.—*Relative esophoria, asthenopia with fundus changes, apparent increase of astigmatism, with complete disappearance of the esophoria and asthenopia.* Mr. H., aged 32, Professor of Mathematics, suffered greatly from asthenopia. He had been wearing –.75cy. ax. 180° over each eye for both distant vision and near work for several years. These glasses had been ordered by his physician without the use of a mydriatic. With them V = 6/xii in each eye. No other glass materially improved his vision. The preferred reading distance was 27cm., and the range was limited between 20cm., and 30cm., but in this range he read D. = .50 readily. He was nervous, suffered from insomnia, and was the victim of fronto-occipital pain, aggravated by exposure to strong light, or by reading. He had in both eyes a fluffy fundus, and there were fine granular changes in the macular region. The choroid was honey-combed in considerable areas, while the temporal border of each nerve was embraced by a faint absorption crescent. At 6m. there was an esophoria of 6° to 10°, and 2° of right hyperphoria. Abduction was 6°, adduction 20°. At 33cm. esophoria varied from 4° to 10°. After the prolonged use of a strong mydriatic he selected the following glasses which were confirmed by the ophthalmometer and the retinoscope:

O. D. + .50 ◯ + .75cyl. ax. 90° V. = 6/ix.
O. S. + .50 ◯ + 1.cyl. ax. 90° V. = 6/ix.

His asthenopia was much relieved, and through his correcting glasses, while still under the influence of the cycloplegic, the hyperphoria promptly disappeared, and the esophoria fell to an uncertain 2°, at times being entirely absent. The mydriatic was discontinued, and he received alteratives internally for the fundus changes. He was allowed to recover from the influence of the cycloplegic under the constant use of his glasses. In ten days he had a normal range of accommodation but vision promptly fell to 6/xxx, and the esophoria was once more 6°, but there was no return of the hyperphoria. The asthenopic symptoms had recurred. Notwithstanding his normal physiological range of accommodation he received + 1. added to his full correcting glasses for reading, and was instructed never to work without this additional aid, and to give his eyes at frequent intervals a few moments of rest. The asthenopia promptly disappeared again, the vision rose to 6/vii½, and the esophoria once more disappeared. In six months he returned because of increasing discomfort after near work. The esophoria had not returned, but in its stead he then had a low grade of exophoria, and what was more surprising, the mires of the ophthalmometer now over-lapped two steps in the right eye, and two and a half in the left. A mydriatic was again employed, and the following glasses were selected :

O. D. + 1. ○ + 1.50cyl. ax. 105° V. = 6/vi.
O. S. + 1. ○ + 2.00cyl. ax. 75° V. = 6/vi.

In a word the radius of curvature in the cornea had greatly increased, especially in the horizontal meridian. He received full correcting glasses, which he has worn constantly for several years with perfect comfort. The fundus changes disappeared. It goes without saying that a tenotomy of the interni, or of the right superior rectus would have been a misfortune to this patient. The actual change in the curvature of the cornea as shown by the ophthalmometer is of great interest. The explanation probably lies in the long-continued strain of the accommodation, not only to overcome his congenital hypermetropic astigmatism, probably correctly represented by his last correcting glasses, but in addition to this anomaly the concave glasses which had been prescribed in the first instance by his physician.

This he was able to do only by calling upon his convergence. To prevent the eyes actually rolling inward they had been fixed as it were by tension upon the externi and the simultaneously acting group of muscles. This pressure upon the ball changed its curvature, actually shortening the radius of the cornea in both the vertical and horizontal meridians, but to a greater extent in the latter, and by this means neutralized a part of the congenital astigmatism. The condition had existed so long that it became in a measure the fixed form of the globe and relaxed gradually under the relief afforded by the mydriatic in the first place, and subsequently by the use of the convex glasses for distance, supplemented by the + 1. for near work.

I believe that the history of this patient explains not only many of the cases of reported increase of astigmatism, but also many cases of relative esophoria. The history certainly shows that the form of the anterior segment of the globe is by no means as stationary as I at one time believed. This is particularly true of very young eyes.

This fact was exemplified by Case II.—J. McC., aged 10 years, was brought to me March 3, 1894, with frontal pain and weak eyes. He was at the same time under the care of Dr. Wharton Sinkler for chorea. The conjunctiva of both eyes was injected, the caruncles red and swollen, the anterior perforating vessels full and tortuous, the optic disc injected, and the entire fundus fluffy. Vision =6/vii½ in each eye. He was taking iodide of iron and arsenic from Dr. Sinkler. A mydriatic and smoked glasses were prescribed, and the boy taken from school. After four days he received the following glasses, which corrected his refraction error :

O. E. + 1. ⊃ + .37cyl. ax. 100°
O. S. + .62cyl. ax. 80°

to be worn except at out-of-door sports. His chorea was much diminished under the treatment, but persisted in a modified form for many months. It was found necessary, however, to wear his glasses constantly to avoid the headache, red eyes, and undue sensibility to light. With them he was perfectly comfortable, and they were worn without change or trouble until the present month. He came on May 27, 1899, complaining of a return of brow pain aggravated by use of his eyes at near work. The ophthalmometer revealed a corneal astigmatism of 2.D in each eye. A careful mydriatic correction resulted as follows :

O. D. + 1. ⊃ + 1.25cyl. ax. 90° V. = 6/v.
O. S. + 1. ⊃ + 1.50cyl. ax. 90° V. = 6/v.

In 1894 this astigmatism was not present, as was shown by the most careful study by both subjective and objective methods.

CASE III.—*Anisometropia, Violent Asthenopia.* Mrs. F., age 35. This patient was referred to me by her physician, who found it impossible to control her left periorbital neuralgia. The pain was more or less constant but would frequently culminate in violent attacks of pain attended with nausea. The left eye would, during these attacks, become injected and tender to palpation. She has worn glasses for O. D. + .50cyl. ax. 90° O. S. Plane, which had been prescribed for her several years before, and worn constantly. She promptly stated that the left eye was valueless and had never been used. There was a scar in the left frontal region one inch above the supraorbital ridge which had been caused at birth by instrumental delivery. There was a slight lack of symmetry in the face, due to a receding of the left periorbital region, possibly due to the pressure of the forceps at birth.

O. D. V. = 6/v.
O. S. V. = 6/lx, letters distorted. The ophthalmometer indicated in O. D. As. = .50 D. ax. 90° O. S. As, = 6.00 D. ax. 115°. A mydriatic and smoked glasses were prescribed. The pain in the left brow promptly disappeared, and after several examinations the following glasses were prescribed for constant use :

O. D. + .50cyl. ax. 90° V. = 6/v.
O. S. — 2.75cyl. ax. 25° + 2.75cyl. ax. 115° V. = 6/xxv.

The relief was prompt and complete, there being no recurrence of the headache after the instillation of the mydriatic, and the eyes are now used with impunity.

The details of this case have been presented because it illustrates the necessity of correcting accurately the error of refraction in both eyes in many cases of very high anisometropia. In this patient no change was made in the right glass which had been prescribed for her by a colleague, but he had evidently thought it unnecessary to correct the highly defective left eye. However cogent the theoretical objections may be to such management, I have seen many examples of great relief afforded by the correction of an apparently unused eye. It is often important to correct each eye even in cases of high myopic refraction, on one side, and hypermetropic on the other. It is usually necessary, however, to give also glasses for near work which correct each eye for an artificial far point, without regard to the age of the patient.

CASE IV.—*Progressive Myopia, Choroiditis, Distressing Asthenopia.* J. F., aged 15, school boy. There is probably no more important group of patients applying for relief than the one represented by this patient. The problem involved in their treatment is the arrest of steadily progressing distension of the globe and the associated pathological changes in the fundus, with the least possible interference with their educational progress. In this case the outlook was a most discouraging one.

O. D. V. = 6/xx.
O. S. V. = 6/L. squinting.

His vision had always been defective so that when first entering school he was compelled to have a front seat in order to see what was written on the blackboard. In looking at distant objects he persisted in half closing the eyelids, by this means securing a horizontal slit and shutting off the vertical meridian of the cornea.

The ophthalmoscope revealed a high degree of apparently simple myopic astigmatism. There were present commencing macular changes in each eye, and a large semiatrophic crescent at the temporal margin of both nerves. The entire fundus was fluffy, and extensive absorption areas were already present in the lower and nasal half of the ophthalmoscopic field. The eyes were unduly sensitive to light and any attempt to read caused increased lachrymation, brow and post-ocular pain shooting to the occiput. The boy was nervous, slept badly, and seemed on the verge of a general break-down in health. He received hyoscyamine sulphate, and smoked glasses, and his school work was stopped. Internally iodide of iron was prescribed. The mydriatic was instilled three times daily for four days, under which the pain disappeared, and the fundus conditions were greatly improved. He then received the following formula for glasses, and the mydriatic was omitted:

O. D. + .50 ○ — 2.50cyl. ax. 10° V. = 6/ix.
O. S. + .75 ○ — 4.00cyl. ax. 180° V. = 6/ix.

He was not allowed to return to school for six weeks. He then resumed his work, in January, 1897, vision having risen to almost normal acuity in each eye with a corresponding favorable change in the fundus conditions. He was seen at frequent intervals until the following December, eleven months later, when he had an almost sudden return of all his former symptoms, both local and general, and vision fell to 1/3. A mydriatic was once more employed, the instillation being made three times daily for several days, when it was found that the hypermetropic meridian had disappeared, the static refraction in each eye being a compound myopic astigmatism. He received the following formula for glasses:

O. D. — .50 ○ — 3.50cyl. ax. 10° V. = 6/vii½.
O. S. — .25 ○ — 3.50cyl. ax. 5° V. = 6/vii½.

After three months he was allowed to return to school, but received bifocal glasses for use in the school room, the lower part of the glasses giving him an artificial far point of 40ctm. With these he has pursued his school work without pain, and exhibits no tendency to a further increase in his myopia. I believe the reading glasses which removed all strain at near work to have been an important factor in this case. This patient is undoubtedly one of the numerous group I have already published* where the originally defective vision was caused by a high hypermetropic astigmatism. Had this been accurately corrected by convex glasses at the commencement of his school life, the intraocular disease and the consequent myopic refraction would have been prevented. Such cases furnish a strong plea for the inspection of the eyes of school children before they commence their educational process.

TWO NEW INSTRUMENTS FOR MEASURING THE MONOCULAR FIELD OF FIXATION.†

BY F. B. EATON, M.D.
SAN FRANCISCO, CAL.

Illustrated.

The two instruments by which I have been able to measure the amplitude of rotation of the eyes with an accuracy hitherto, I think, impossible, are presented together because they were designed simultaneously and the results of each used to check those of the other. Each has its own excellencies.

The essential features of the reflecting tropometer shown in Fig. 1 were described in the OPHTHALMIC RECORD for September, 1898. Nearly a year of labor has greatly improved its practicalness and accuracy. The most important improvement is that of *attaching the instrument to the head* so as to assure its fixed relation to the latter, thus doing away with one of the greatest sources of error and the uncomfortable clamping of the head.

The apparatus consists of a head-piece, Fig. 1, the branches of which are approximated by the screw S, and will fit any head. By means of the bent rod E, and the screws B and C, the plane A A is fixed in any desired position with reference to the eyes and head. The instrument itself, which is simply a wooden frame with parallel sides, is attached to the plane by the screw D or D, according to the eye being tested, and can be rotated on the screw around the line of fixation. In adjusting the instrument, the object is to place the plane A A parallel to an imaginary transverse plane passing through the centers of rotation of the eyes and perpendicular to a horizontal plane passing through the lines of fixation

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[*] American Journal Medical Science, Oct., 1884; *Transactions American Ophthal. Society*, Vol. III, p. 751, Vol. IV, pp. 102 and 520; *School Hygiene*, p. 363; Norris & Oliver *System of Diseases of the Eye.*

[†] Demonstrated before the *California Academy of Medicine*, March 28, 1899.

when the eyes are in the primary position. To place it parallel to the transverse plane the instrument is so adjusted that the distance from the projection F (parallel to A A) to the external canthus is the same on each side. How it is placed perpendicular to the horizontal plane will be shown when describing the other instrument. When properly adjusted, the plane A A is firmly fixed by the screws B and C. Then after measuring the field of one eye, the instrument is detached from the plane by unscrewing D, and moved over and screwed on in front of the other eye. Thus the amplitude of rotation of the eyes *relative to each other*, is assured in spite of any error in adjusting the plane A A. Along the sides of the instrument are long slots, G, covered on the inner sides by the graduated strips, K, designed by Dr. Casey Wood for use on the perimeter arc* They are retained by small turn-pins, and can be quickly removed. Each side is marked out alike in centimeters and half centimeters beginning at the proximal, to the distal end. The width inside is exactly 100 mm. The mirrors, M M, slide easily back and forth.

In Fig. 2 is shown the method of trigonometric measurement of the angle of rotation. Suppose the angle Y, X, Z is to be measured. The patient sees the reflection of the graduated strip between O and B projected towards *b*. He is told to read the farthest possible syllable to his left. Suppose this is at B, which is 169 mm. from O; it is seen as if at *b* by reflection from the mirrors R S and M N. The surgeon now moves the mirror R S until one of the lines scratched through its silvering appears to the patient to cover B. Its position A, on P C, is noted; it is the point of reflection. Suppose it is 50 mm. from P. We now have the two equal and similar triangles D B A and B A C, in which the angles DBA and BAC are equal. $BD = OB - PA = 169 - 50 = 119$ mm., and AD, 100 mm. $\text{Cot. } DBA = \frac{BD}{AD} = \frac{169 - 50}{100} = 1.19 = 40^\circ$. But $DBA = BAC$, and $BAC = YXZ$, which is the angle sought.

In practice it is only necessary to deduct the position of the mirror-line in millimeters from that of the syllable read, and divide by 100, and read off the angle from a table of cotangents attached to the instrument. In making an *objective* examination the graduated strips are removed and a small vertical marker moved along the side across the slot G, and the mirror shifted until mirror and mirror-line appear to the operator whose eye is at B, superimposed upon the reflection of the pupil. In the above example when this is done, the patient's eye appears projected at X,

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* *Jour. Amer. Med. Asso.*, vol. xxvii, p. 1130, Nov. 28, 1896.

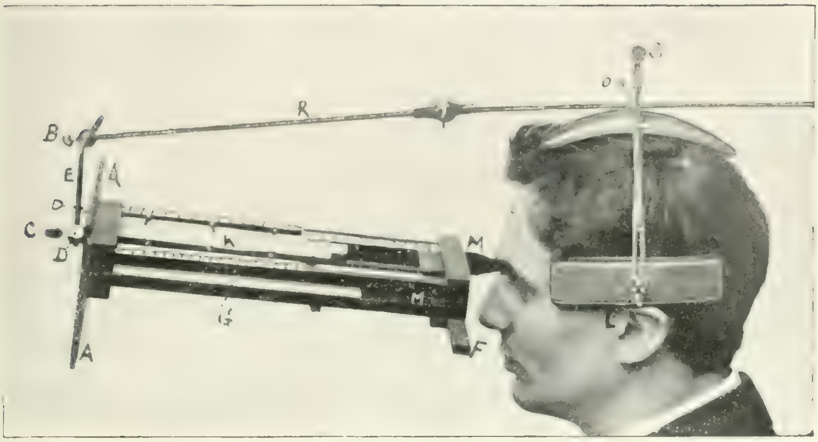

FIG. 1.

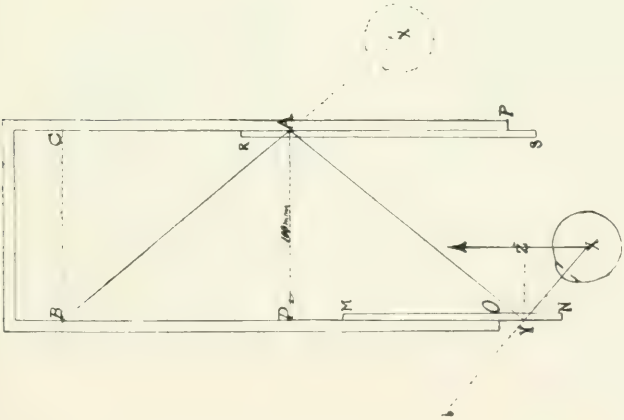

FIG. 2.

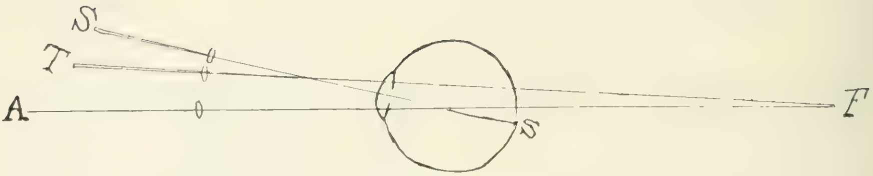

FIG. 3.

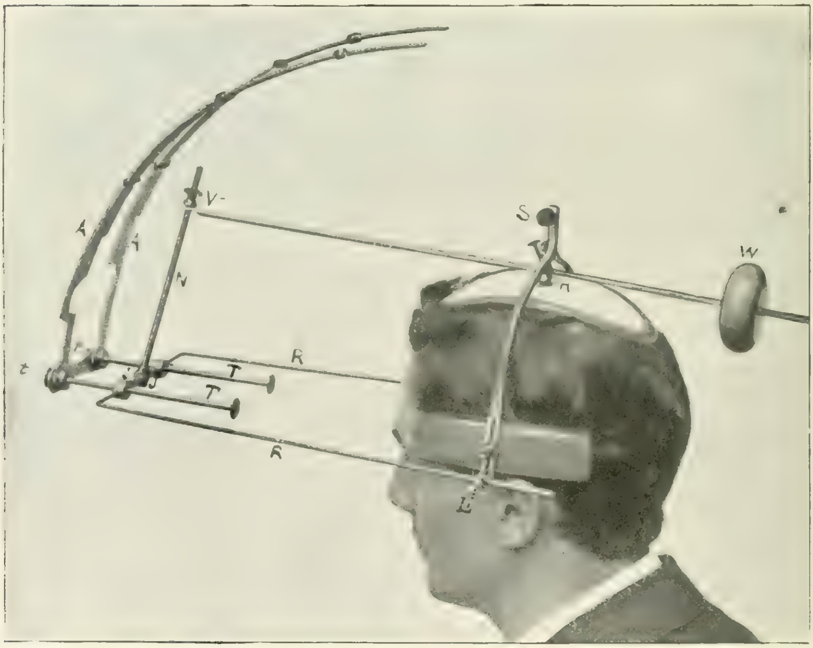

FIG. 4.

with B, A, and X in one straight line. The angle is then estimated as above.

The second instrument, Fig. 3, which is the joint invention of Mr. F. M. Graham and myself, is so constructed that two similar arcs, A A, of 27.5 centimeters radius are accurately and simultaneously centered with each eye. It is fixed to the head by means of the same head-piece used with the reflecting tropometer, and is balanced by the weight W. The rod R, and the tube Tt, on each side, are in the same plane which passes through a true radius of the arc, and they are independently movable on the sliding joints J J, by which the tubes can be separated in accordance with the pupillary distance. The threaded rod N moves like a wheel spoke on the joint.

The instrument is adjusted for use by sliding it on the swiveled screws L until the distance between the center of the arcs and the external canthus of the corresponding side is exactly 27.5 centimeters. By means of the screw V, by adjusting the head-piece, and by moving the screw L up or down in its slot so that each rod R is brought level with a point on the upper lid ⅛ inch above the external canthus,* the tubes Tt and Tt are so placed that the patient can see *straight* through them.

That the radius passing through the center of each arc is then placed as accurately as is possible coincident with the line of fixation of the eyes in the primary position, is made apparent in Fig. 4, where F corresponds to the swivel-screw L, A to the tube when in the primary plane, and T and S to it when not in that plane. For, while the tube could be seen through if F (that is L) were opposite the center of the eye, even if not in the primary plane (as S S) in its position some distance behind it, the line of fixation and the axis of the tube only coincide when the latter is on A F, not T F. When adjusting the tubes laterally the instrument moves on the point H as a center, which is also far behind the eyes.

While the radius can be absolutely made to pass through the centers of rotation, it (represented by the rods R R and the tubes), may not always coincide with the primary plane of fixation, but the distance from the center of the arc to the end of the rod R being 16 inches, when the head is placed approximately in the primary position, any slope of the rods and tubes from the horizontal becomes at once apparent. In placing the plane A A (Fig. 1) of the reflecting tropometer perpendicular to the primary visual plane, a rod 16 inches long is placed in the swivel-screw L, adjusted as in the rod R, Fig. 3, the sights in the instrument used as if they were tubes, and the sides of the instrument placed parallel with the rod.

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* In most persons, in the primary position, the center of the pupil is ⅛ inch above a line joining the canthi. See *System of Dis. Eye*, Norris and Oliver, Vol. I, p. 80, Fig. 7.

A comparison of the fields as measured by each of these instruments from day to day, shows some differences, but absolutely none as regards the rotations of the eyes *relative* to each other. The fields are also remarkably uniform; on several successive days I do not often find a greater difference in any one direction than half a degree, and am not satisfied until during daily examinations the *total* rotations in all the meridians, as, for instance, the sum of the rotations in the vertical meridian (up and down) do not vary. Such uniform accuracy, however, is not possible until the patient has learned to put forth his utmost effort, and it is positively necessary to make from three to five trials in a given direction, and above all to rest the eye well after each.

The accuracy possible is such that my experience has been that the existence of hyperphoria and of over- or underaction of elevators or depressors, and the eye affected, can invariably be detected, and always agree with the other tests for this condition. I have also found that the rotation upward is apparently a fixed quantity, for while the boundaries in all other directions are uniformly extended by practice, upward it remains unchanged, as if the rotation were abruptly checked by the check ligaments before the effort had reached its limit. When once, therefore, the upward limit has been found by one or two careful adjustments of the instrument, in future examinations as long as the total rotation in the vertical meridian remains the same, the rotations upward and downward respectively, are at once known. As to which of the two instruments is the more useful and practical, I have found the reflecting tropometer more quickly and easily adjusted, but sometimes when the accommodation is weak, or there is a convergence excess, the apparent proximity of test words as seen by reflection leads to slight convergence in accommodation and to diminished rotations outward. Once adjusted, the examination can be made more rapidly with the arc tropometer, which can also be used to accurately measure the rotations of a blind or amblyopic eye objectively. Both instruments were made in this city and are comparatively inexpensive.

706 Sutter St.

QUININE BLINDNESS IN A YOUNG CHILD.*

BY H. MOULTON, B. S., M.D.
OF FT. SMITH, ARK.

Year by year the need for the term "Amblyopia" grows less and less. The convincing experiments on dogs and rabbits recently made and so lucidly described by de Schweinitz† and Holden‡ have enabled us to conceive a distinct idea of the pathology of the effects of quinine on the eye, viz., spasm of the retinal blood vessels, diminished blood supply to the inner layers of the retina, and degeneration of the ganglion cells and nerve fibers followed by ascending degeneration of the fibers of the optic nerve. The way in which quinine brings about the vessel contraction, however, is still not clear. But the described sequence of pathological events seems to be proven and fully explains the phenomena manifested by quinine upon the human retina.

My case is as follows: Fredrick Bornman, aged three years, of good constitution and healthy German parantage, was brought to me August 24, 1898, totally blind. On August 4th and 5th he had been given each day about 10 grs. of bisulphate of quinine for malaria. His physician, Dr. Bennett, to whom I am indebted for these facts, thinking that the fever was tending toward the pernicious type, now gave larger doses, viz., 20 grs. each day, on the 6th, 7th and 8th. On the 9th the dose was 10 grs. On the 10th of August the boy was discovered to be blind. On the 10th and 11th, 10 grs. of quinine each day were given. Thus during five days before the blindness 90 grs. were administered. During the two days afterward, 20 grs. more were given. The date of his visit to me was two weeks after the blindness was observed. The boy was somewhat pale, but in fair flesh and with a good degree of strength and appetite. It was impossible to attract his attention by even the brightest light suddenly focused on the eye. The pupils were dilated and immobile. The optic papillae were perfectly white and the blood vessels were almost obliterated, appearing as mere threads. The hearing and other functions were good. Having in mind the case of Dr. Calhoun's* in which blindness was permanent but in which 720 grs. of quinine were taken, and fearing that blindness and the appearances of complete atrophy which had lasted two weeks unchanged, signified grave structural changes actually present or to come, I gave a guarded though not hopeless prognosis. The treatment advised was strychnine and Fowler's solution of arsenic, the latter being added for its anti-malarial effects.

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*Read before the Section of Ophthalmology, of the American Medical Association, at Columbus, O., June, 1899.

† de Schweinitz, "Toxic Amblyopias" 1896.

‡ Holden, Arch Ophthal., Vol. XXVII, p. 583.

By letter the father reported some evidence that the child began to see a little light on November 1st, nearly twelve weeks after the accident occurred. On December 14th, six weeks later, I saw the child for the second and last time. The pupils are still somewhat dilated but respond moderately to light. The discs are pale but not so white as before, and the arteries have returned to about half their normal size. Sight is good enough to enable the little patient to find and pick up such objects as pencils and even pins from the floor. In so young a child it is impossible to measure the fields, but I could see from his actions that the fields must be restricted.

While quinine blindness is every now and then described, it is generally regarded as rare. Yet I do not think it so rare as commonly believed. While I do not live in that part of my state which is most malarious, yet I often come in contact with physicians who do, or have, and it is not unusual for some of them to speak of cases of transient impairment of vision in persons who have taken large doses of quinine. I have notes of a case of a negro girl now 8 years of age, with vision $\frac{20}{40}$ when corrected, pale optic nerve heads and slight pathological changes at the macula, who is said to have been blind from quinine for a few days when 4 years old. From the observed cases and the pathological reports of Holden and other observers, it is probable that none of these unreported cases escape without at least some narrowing of the visual field, though the dimness of sight may have been very transient.

Rooms 1 and 2, Halliwell Building.

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*"A Contribution to Quinine Blindness" by A. W. Calhoun, M.D., Ophthalmic Record, Vol. VI, P. 360.

A COMMUNICATION UPON ACOIN.—A NEW LOCAL ANÆSTHETIC.*

BY ROBERT L. RANDOLPH, M.D.

OF BALTIMORE.

In the January number of the *Therapeutische Monatshefte* there is an account of the discovery of a new local anæsthetic—Acoin—by Trolldenier, of Dresden. Trolldenier's first experiments to show the toxic properties of this product were made on dogs. His results demonstrated that acoin was much less poisonous than cocain.

The anæsthetic properties were tested on the rabbit's eye. At first the powder was tried and then concentrated solutions, but in these forms it proved too irritating, though it produced anæsthesia which lasted "several days." With weak solutions these results were obtained:

1:1000 produced anæsthesia lasting for 15 minutes; 1:400 produced anæsthesia lasting for 30 minutes; 1:200 produced anæsthesia lasting for 60 minutes; 1:100 produced anæsthesia lasting for 40-80 minutes; 1:40 produced anæsthesia lasting for over a day.

Solutions of 1:40 were irritating though they produced no injury. It was found that the solutions were but slightly influenced by light, and when exposed to the air from 3-11 days were shown to be sterile.

So far as I know acoin has not yet been tested upon the human eye. My first experiments were made with a solution of 1:300. With this solution I have extracted fifteen foreign bodies from the cornea. It was noticeable, however, that in those cases where the foreign body had been imbedded for some time and where there was congestion, repeated instillations were necessary to make the removal possible and even then the anæsthesia did not seem as complete as with either cocain or holocain.

Where there was no congestion the removal of the foreign body was painless. One pterygium was removed and I noticed no difference in the anæsthesia from that produced by either cocain or holocain. Two tarsal tumors were opened and curetted and the operations were about as painful as when performed under cocain or under holocain. I have had no opportunity of making the corneal incision, but I should think that

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*Read at the thirty-fifth annual meeting of the *American Ophthalmological Society*, New London, Conn., July, 1899.

acoin would produce satisfactory anæsthesia for such an operation so long as the eye was not in a condition of irritation. The stinging following the instillation of a drop of acoin is greater than that after cocain. This was shown conclusively. A drop of acoin was dropped into one eye and a drop of cocain into the other and in every case the acoin was more painful. In this respect it resembles holocain. It took quite as long to produce satisfactory anæsthesia as it does with cocain and longer than it does with holocain. In this respect my results do not agree with hose of Trolldenier and Hesse, who call attention to the rapidity of its action. It will be remembered, though, that the experiments of these observers were made on rabbits, and from the well-known behavior of these animals on the operating table we would not be inclined to think that their sensitive nerves were very highly developed.

Acoin is a white powder, quite soluble in water in the proportion used in my experiments, i. e., 4½ grains to the ounce of water. It is derived from guanin, which is found in almost all animal and vegetable cellular tissue. Acoin is related to caffein and theobromin.

Conclusions.—Acoin in solutions of 1:100 and 1:300 produces satisfactory anæsthesia in an unirritated eye in about the same length of time as cocain.

2. In more than one case where the eye was congested repeated installations of acoin were inadequate to produce satisfactory anæsthesia.

3. Inspection of the cornea with a high power lens failed to show any defects in the epithelium after its use.

4. Acoin has no effect upon accommodation.

5. It has no effect upon the size of the pupil.

6. It does not increase intra-ocular tension.

7. Several experiments showed that the staphylococcus pyogenes albus did not grow in agar which contained acoin in the proportion used in the clinic, and furthermore that exposure of this organism to the action of acoin for twenty-four hours was followed by the death of the organism. This would look as though acoin were not only an inhibitor of the growth of the staphylococcus albus but that it also killed this organism after a certain length of time.

It is of course evident that conclusions drawn from this limited experience with acoin may have to undergo more or less modification with further trial.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, AUGUST, 1899. No. 8. NEW SERIES.

EDITORIALS.

POPULAR AND SEMI-SCIENTIFIC NOTIONS ABOUT CATARACT.

Recent notices in the secular press that Her Majesty, Queen Victoria, is afflicted by cataract, naturally call attention to this peculiar form of disease. And though the subject is one that has received a vast deal of attention from medical writers, many of whom have very ably and often covered almost every known phase of the disease, from its remotest etiology to its latest method of treatment, still a few general gossipy words on the matter may not be amiss.

The popular misconception of cataract must be obvious to all doctors whose special work requires them to treat the disease. A large class of the laity seem to think cataract an affection of the cornea, and will frequently speak of having it "cut" or "peeled" off; very likely confusing it with the not uncommon pterygoid growths. This is a natural mistake resulting from widely prevailing ignorance of the anatomy of the eye among otherwise fairly well-informed people.

Many amusing stories reach us of the wonderful "absorbent cures" of this disease by "Yerb doctors." These "reports" and proffered "cures" become very prolific when some prominent person happens to develop cataract and the secular press "makes news" of it.

During the latter part of the Hon. Mr. Gladstone's life, when it was current that an operation would be performed on him for the removal of the affected lenses, it is reported that letters by the hundreds and tens of hundreds were showered at the Grand Old Man, guaranteeing in most cases absolute cure "without the use of the knife." These suggestions, it is said, ranged all the way from decoctions, to some of which were added "a few drops of extract of the eye-teeth of a seven-year-old porcupine," to the Christian Science or *mind cure.*

Amusing as these things seem to us, they scarcely parallel some of the papers which have been seriously printed on the subject by our medical Sir John Mandevilles, and equally well-known Hajjis. Indeed, Morier makes the king's Hakim Bashi speak with scarcely more humor than some who have written concerning cataracts. There is a difference however; the Hajji often unconsciously admits the vices of lying and deceit — those of our day never!

I remember to have seen at one time a most amazing theory of the etiology of cataract, published, I think, in the thirties. The theory accounted for everything in a truly melancholy and wordful manner. The author of the article in his day and time I have no doubt was thought by many to be wondrous wise. Among other things he said: "A subtile relationship and interfusion there be, and do exist between the tendency to pathologic manifestation of this curious lens-opacity (cataract) on the one hand, and certain mental activities, and development of the higher sensibilities of soul or spirit, on the other hand. * * * * This may most often (it be said by learned experimenters) best be prevented from running its white course to full blindness by freely breathing the finest spirit-dust of dry-slack lime."

Just what "spirit-dust of dry-slack-lime" is like could not be clearly determined from the author's elaborate composition.

A. W. C.

A QUESTION OF ETHICS, OR PROFESSIONAL RELATIONS.

Every now and then, the ophthalmologist is consulted by some one who has been suffering at the hands of the counter-prescribing optician, until he will stand it no longer; and who gives the history that he was advised to go to the optician by his family physician. Such an occurrence gives an unpleasant shock to one's pride in his profession. That physicians can be so ignorant of the important issues involved; or so careless of the welfare of their patients, when that welfare was not directly connected with the putting of fees into their own pockets, is a fact, that it is disagreeable to be reminded of.

Still it is a fact, and as such must be dealt with. There should be means for putting an end to the practice. At the late meeting of the

American Medical Association, resolutions regarding it were adopted as follows:

"Resolved by the American Medical Association, That the treatment of errors of refraction in the eyes requires a knowledge of pathology and therapeutics:

'Resolved, That the application of lenses in such cases is a part of the practice of medicine, to be undertaken by no one not qualified to practice medicine and surgery."

We believe the minutes of the association are in error in stating these resolutions, emanated from the ophthalmological section. But the members of that section all understand that there is reason for some declaration on the subject, and it will be none the less significant, because the call for it has come from elsewhere. The association might have characterized the practice as reprehensible because it is, in effect, a medical consultation between the physician, and one devoid of a medical education. The physician failing to relieve a headache, by the drugs he habitually prescribes for headaches, calls to his assistance not a qualified medical man who can give him the most intelligent assistance, but a person ignorant of medicine though often making a loud pretense of skill in diagnosis. From the standpoint of professional ethics, the transaction is of the same kind as if the ophthalmic surgeon, having removed a chalazion or corrected an error of refraction, should send his patient to the druggist for advice as to the best cough-syrup, anti-bilious pills, or general tonic.

It is to be feared the doctor sometimes does this because the optician will not be so likely to fathom his ignorance of ophthalmology, or because he is his patient, or has given him a pair of spectacles, or promises a percentage for the glasses sold. For those who refer the patient to the optician for the percentage paid them, there is nothing to be done, except to hope that their betrayal of the patient's confidence, and their eminent unfitness for a liberal profession, will in time reveal themselves so clearly that their opportunities to thus prey upon the community will cease. But there are some who send patients to opticians for glasses, because they have no proper appreciation of the importance of ocular pathology, and of the intimate relation of eye lesions and symptoms to those of extra-ocular or general disease.

It must be confessed that in former years, the medical schools have sadly slighted and ignored training in this department of medical science; and even with the great improvement of the curiculum that has taken place, there is still too much cause for reproach in this respect. Up to about twenty years ago practically no teaching of ophthalmology was offered in many of our colleges. Even the professor of surgery who taught the whole subject in two lectures, often allowed these lectures to be crowded out, to make room for what he deemed more necessary matter. And since professorships of ophthalmology have been established, so long as examinations in this branch were not a requirement for graduation, and no emphasis was laid on its importance, the teaching was neglected, and the mass of medical graduates went out almost as ignorant of its important facts as before. Bearing these conditions in mind it is rather a striking illustration of the small value of educational machinery and the great importance of the appetite for learning, that some bright and progressive men working in the lines of general surgery and medicine, manage to get so good an appreciation of ophthalmology as they do.

The ophthalmologist has a great opportunity to educate the profession at large as to the importance of his especial work, and its essential connection with that of other branches of medical and surgical practice; and both interest and duty call upon him to use that opportunity to the fullest extent. Just now there is perhaps the greatest reason to emphasize; the intimate relation between the effects of eye strain, and other pathological conditions, and the folly of handing over the patient who may, or may not, be suffering from eye-strain, to the care of a layman who, even if perfectly conscientious, by the circumstances, under which his services are called for, his whole education, daily work, and habits of thought, as well as by his chance of getting any pay for his work, is pledged to see an error of refraction in each eye he looks at, and to see little else.

The medical societies and the medical journals are open to our use in this educational process. Cases illustrating the unfitness of the refracting optician as a medical consultant, constantly come before us. Let each worker in ophthalmology make himself an educational center for post-graduate teaching. Such work will be far more effective than resolutions, appeals to the code of ethics, or efforts by legislation to eradicate the dangers of the refracting optician. Ordinances, either professional or civil, are useless and harmful except as they are supported by intelligent public sentiment. The first step is to create that sentiment, then the legislation will be less needed, and far more effective.

EDWARD JACKSON.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

A meeting of this society was held on May 4, 1899, the president, Mr. H. R. Swanzy, F.R.C.S.I., being in the chair.

The evening was devoted to the exhibition and discussion of cases.

Tumors of Iris.—Mr. A. H. Thompson showed a miscroscopic section of a tumor from a case which had been shown at a previous meeting of the society. The portion of iris containing the tumor was removed, and the patient now had V = 6/6 in the eye. The tumor was probably a spindle-celled sarcoma.

Mr. Treacher Collins showed a case in which the tumor occupied the upper inner part of the iris, and the lens was cataractous. The patient was a woman, aged 63, who had had a black spot in the eye since childhood. The piece of iris was removed and the cataract extracted at the same time. The growth consisted of large endothelial cells with sharply-defined nuclei. It resembled in structure pigmented moles of the skin, and was probably innocent.

Mr. John Griffith said that he thought Mr. Thompson's case was one of myoma and that Mr. Collins' case was one of a case of a large round-celled sarcoma.

Mr. Devereux Marshall said that he had cut and prepared the sections of the two growths and utterly disagreed with Mr. Griffith and could not imagine how a tumor which had been present for over sixty years could be a sarcoma.

Unusual form of Opacity of Cornea.—Mr. Treacher Collins showed an example of this condition. It was present in both eyes, but was more marked in the left. It had much the appearance of a broken cobweb stretched across the cornea; the lines were in the corneal substance. They were possibly the tracks of old blood vessels after interstitial keratitis, but they were very wide for blood vessels, and did not extend to the periphery of the cornea.

Mr. Juler thought they were tracks of old blood vessels; there was a suspicion of scarring of the angles of the mouth which he thought made previous interstitial keratitis probable.

Mr. Breuer thought that the lines were similar to those seen in superficial punctate keratitis described by Fuchs.

Mr. Silcock thought that they might be blocked lymphatic vessels.

Mr. Hill Griffith asked whether they might possibly be due to a vegetable fungus.

Vascular Formation in the Vitreous in Diabetes.—Mr. Arnold Lawson showed a patient who had been known to be diabetic three years; his sight had failed two years in the right eye and six months in the left. The right lens was opaque; in the left eye there was at first a vitreous haze which obscured the details of the fundus. As this cleared there was found a connective-tissue formation consisting of feathery tufts proceeding from a central stock, richly supplied with blood vessels.

Sloughing of Cornea Rapidly following on Fracture of the Base of the Skull.—Dr. Lediard showed a man, aged 38, who had been knocked down by an engine. When first seen he was semi-comatose; he had right facial paralysis, the eye remaining open, severe scalp wounds, and the escape of cerebro-spinal fluid from the ear; the fifth nerve was uninjured. Notwithstanding the care that was taken of him his cornea sloughed, and the eye had to be excised. The probable reason for the sloughing was the exposure of the cornea consequent on the facial paralysis, and the condition of semi-insensibility induced in the cornea by the partial coma.

Primary Carcinoma of Eyeball.—Mr. Simeon Snell (Sheffield) showed this specimen. The patient was a man aged 69. There was a history of an injury to the eye (cornea) fourteen years before. When first seen almost the whole of the cornea was involved in a modulated, hard, irregular growth. Careful examination failed to disclose any growth elsewhere in the body. The eyeball was enucleated, the orbit cleared out, and chloride of zinc paste applied to the socket. The growth had perforated the globe posteriorly. Mr. Treacher Collins kindly examined the eyeball, and reported that the appearances of the growth were typically those of carcinoma, and that it originated within the globe, but in which structure it was impossible to say.

Mr. Treacher Collins said that formerly it was thought that nothing but sarcomata and gliomata occurred within the eyeball, but now that tubular glands had been demonstrated in the ciliary body, it was possible that the epithelium of these might be the starting point.

Mr. Silcock thought that the growth might be an endothelioma.

Mr. Bronner thought that visceral growths might exist a long time without symptoms; very great care should be taken before calling such a growth as this a primary one.

Mr. Rowan showed a specimen of a carcinoma of the eyeball secondary to malignant disease of the lung.

Mr. Simeon Snell showed a stereoscopic photograph of a case of traumatic ptosis.

Mr. Mackenzie Davidson showed an X-Ray photograph of a piece of glass from a Florence flask that had been localized in the eyeball.

Eyeball with Fragment of Steel lodged in its Coats.—Mr. George McKay showed this specimen with skiagraphs. A traumatic cataract had been formed, which was removed, leaving the media clear. The position of the foreign body could be seen by the ophthalmoscope. As it appeared to be encapsuled it was not interfered with; after an interval of quiescence the vision failed, and the eye became irritable; the iris had a tawny brown color. Removal of the foreign body by the magnet failed. After enucleation it was found fastened to the coats of the eye. In order to trace the parts of the eye discolored by the rust of the iron Prussian blue was formed with it; the corneal epithelium and the filtration angle were the parts most widely stained. Descemet's membrane escaped.

Mr Simeon Snell thought that no magnet would be capable of removing this fragment.

Mr. Anderson Critchett showed a case of solid œdema of the eyelids in a woman aged 29, which had followed an attack of erysipelis. The masses had been treated in all sorts of ways including the removal of large pieces of the solid tissue, but the swelling soon came back again. Mr. Eyre had seen seven or eight cases, and they had all followed erysipelas.

Filamentary Keratitis.—Mr. Rayner Batten showed a woman, aged 29, who had had chronic conjunctivitis one year. A number of threads were seen hanging from the surface of the cornea near its edge, they were about 1 mm. long, and consisted of a twisted rope of epithelium. No vesicles were seen. They were symmetrical in the two eyes.

Mr. Devereux Marshall said he had seen many cases, and he believed that they were not so very uncommon, but that they were often missed. He had found that the filaments were usually made very obvious by a drop of fluorescine.

Mr. Juler showed a case of orbital tumor which fluctuated, and on tapping, dark blood escaped.

Mr. Lawford thought it might be a distended ethmoidal cell.

Mr. Lang had met with a similar case which consisted of broken-down nævoid tissue.

C. Devereux Marshall.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held May 9, 1899, with the president, Dr. Lyman Ware, in the chair.

Dr. F. C. Hotz reported a case of *Blood Exudate in Cornea* in a man whose eye-sight had been poor since childhood, at which time he had smallpox, followed by inflammation of the eye, leaving the corneæ in a more or less hazy condition. His eyes have never troubled him otherwise; he has never had any recurrent inflammation. He was connected with the army in Germany and did his work without any trouble. One day he felt a smarting sensation in the left eye; it became very red for a day or two, but not until four or six days afterward did his wife notice a dark spot covering the center of the cornea and gradually getting larger. The redness subsided; he had no pain, and when Dr. Hotz saw him on the 26th of April there was absolutely no redness about the eye. Tension was perhaps a little below the normal standard. There was a large, almost circular, disc in the cornea of a deep purplish color with a bright blood-red margin. Focal illumination showed that the corneal epithelium was hazy, but no blood vessels could be found in the corneal tissue even by the magnifying lens, and the pupil could not be seen at the time, and the sight was just perception of light. The pupil dilated readily under atropin. The anterior chamber was perfectly free and clear, and the ophthalmoscope yielded a bright red reflex from the fundus, showing that there was no disturbance in the vitreous, and the sight improved to counting fingers easily. In the course of two weeks the central infiltration in the cornea has changed its color from a purple to a brown chocolate color.

There is no history of injury. Nearly all the cases reported in literature give a history of traumatism preceding the trouble, and an effusion of blood into the anterior chamber, from which it is thought the coloring matter was taken up into the corneal tissue by diffusion through Descemet's membrane, and microscopical examination showed accumulations of hematoidin crystals in the cornea.

Teacher Collins, of London, has reported nine cases of his own in three years, and believes the trouble is not so rare as it is generally considered. In Collins' cases, seven had injuries, with blood accumulations in the anterior chamber. One was a case of recurrent inflammation (most likely a cyclitis), with spontaneous hemorrhage into the anterior chamber. The other case was one of extraction of cataract. In these cases a degeneration evidently occurred in the eye, which might favor a spontaneous hemorrhage. But in this case we have to deal with an eye which to all appearances is in good condition, there being nothing wrong except a hazy cornea from keratitis in infancy. As there is no history of traumatism, it is difficult to understand where the blood came from.

Discussion.—Dr. W. F. Coleman has tried in old capacities of the cornea, galvanism, one milli-ampere in strength, the positive pole being applied to the cornea, and has obtained encouraging results.

Dr. Hotz: In all cases reported, microscopical examination showed hematoidin crystals scattered through the tissues of the cornea, but no corpuscles; therefore, the conclusion was reached that it was the coloring part of the blood which transuded from the blood collection in the anterior chamber and into the corneal tissue, not a hemorrhage directly into the corneal tissue.

As to treatment, the case has been under observation and the pupil dilated with their atropin. The outlook is not very encouraging for the patient if it will take fully two and a half years before these blood stains disappear. Collins reported a case in which it took that length of time for disappearance.

Dr. E. A. Lawbaugh showed a patient who had been *struck on the inner side of the right upper lid by a piece of steel* from a hammer in the hands of a fellow workman. There was a scar on the outside of the lid, which is at present visible, and one also in the sclera directly under the lid scar. The pupil was not dilated and had a greenish hue. There was marked pericorneal injection and tension—2. V—fingers at 7 feet in the the lower field.

With the ophthalmoscope a line of exudate in the vitreous was to be seen extending downward and backward from the location of the wound in the sclera, terminating in a ball of exudate near the temporal side of the retina. A solution of atropine was directed for home use, and in two days the tension was normal.

A skiagraph was taken, with negative results. The Hirschberg and Haab magnets also gave no result. At end of four weeks the eye was quiet and the patient returned to work.

His vision is now $\frac{20}{200}$, and the pupil of the affected eye 1 mm. larger than that of the fellow eye; the iris having a slight greenish hue. The tension is normal, and the Haab magnet, which was again tried to-day, showed negative results. With the ophthalmoscope, however, it is to be seen that the exudate has split, the lower half falling a little and much thinner. A few flocculent exudates are to be seen situated through the vitreous.

Discussion.—Dr. William A. Mann reported a case similar to Dr. Lawbaugh's, the injury having been received about two years ago. The pupil was very much contracted and with posterior synechiæ; he had had quite a marked iritis; but on getting the pupil partially dilated with atropine one could see in the lower part of the vitreous chamber a dense white exudate, extending pretty well from the lower part to the outer quadrant, running up near the level of the lower part of the iris. It was smoother and whiter than an ordinary detached retina would be, and no vessels can be seen over it. It was an exudate, probably from a foreign body; the disc could be seen fairly well, being obscured only by a little exudate on the anterior capsule of the lens. Vision $= \frac{5}{200}$ or better. The eye improved under the use of atropine. There had been no irritation after the first six or eight weeks after the injury. The Haab magnet gave no result. The eye is absolutely quiet at present and there has been no irritation since the acute inflammation subsided two years ago.

Dr. William A. Fisher: From experience with eyes in the lower animals, a foreign body could not hang in the vitreous, surrounded by an exudate, as is shown in this case, and not be attracted by the magnet. Experiments show that a foreign body can be pulled clear through the vitreous from one side to the other with a Haab magnet. During the last month the removal of foreign bodies from the eye has been tried in fully half a dozen cases. Probably the most interesting case was that of Dr. Wescott's, shown at the last meeting, in which a foreign body was supposed to have struck the eye and entered the anterior chamber; under illumination one could see the spot in the iris. One would have been tempted to do an iridectomy in such a case, as the foreign body seemed plain enough. In all of these cases the Haab magnet made the diagnosis of no foreign body.

Dr. W. F. Coleman: Some years ago, a man, in entering a blacksmith's shop, was struck in the eye by a piece of iron which flew 20 feet from the anvil as was struck by the hammer. Cyclitis followed and sympathetic irritation was set up in the other eye. The injured eye was removed six weeks after the injury and the foreign body found, lying posteriorly in the orbit, had perforated anteriorly and posteriorly the eyeball. In that case, although the foreign body was not in the eye, it had produced cyclitis which was the indication for its removal.

Dr. William E. Gamble showed a case of *embolism central artery of retina left eye.* In temporal field he could count fingers at 1 foot, in other parts of field his vision was practically *nil.* He thought he could detect hand moving before his face. The ophthalmoscope revealed embolism of central artery of retina, the arteries being greatly reduced in size and carrying but little blood. Oedema of retina pronounced, especially about the disc and extending from the disc to and beyond the macula, the extreme periphery of retina showing but little evidence of oedema. The nasal peripheral retina was most free from opacity and the arteries contained more blood. No cilio-retinal vessels were to be seen. The cherry spot characteristic. The patient has aortic stenosis; has never been sick, excepting an attack of typhoid fever a number of years ago. He is fifty-five years old, a robust, well-developed man. It has been frequently observed by Fischer, de Schweinitz and others that the temporal field suffers least from embolism of the central artery. In this case this cannot be explained by the presence of cilio-retinal arteries. A satisfactory explanation has yet to be made.

Dr. C. P. Pinckard showed a case of *tumor of the sclera* which had been brought before the society at the February meeting. The patient has been taking 200 grains of the iodides per day for nine weeks, and he is taking 100 grains a day now. All that is left of the tumor is a little discoloration or injection just below the cornea.

Dr. C. P. Pinckard reported a case of *diphtheritic conjunctivitis* in a farmer, 23 years of age. The lids were enormously swollen, the oedema extending from above the brow over the side of the face onto the left side of the neck. The glands in neighborhood of the ear were very much swollen, as were those in the neck under the jaw. A dirty yellowish serous discharge kept trickling from between the lids and ran down the cheek. An examination of the discharge revealed the Klebs-Loeffler bacillus. The lids were everted with difficulty. The conjunctiva of the upper lid was dark red, much swollen and quite tense. Extending over the outer half of the tarsal surface was a dirty-gray membrane, which could not be wiped off with a cotton swab, but was picked off with forceps in several places. Free hemorrhage followed. In places the lid tissue had been destroyed, and the gray membrane was adherent to the bottom of an ulcer. Above the tarsus, near the fornix, was another patch of membrane much smaller, but equally adherent. On the lower lid the membrane covered nearly the whole tarsal surface, with the same characteristics as on the upper lid. The bulbar conjunctiva was so greatly swollen that the cornea could not be seen except by pushing aside the oedematous tissue. When this was done the cornea was seen to be perfectly intact and transparent, without any signs of haze or ulcers.

Realizing that what was to be done must be done quickly, 4000 units of antitoxin were injected into the patient's back at 4 p. m., March 31, and on the morning of April 1, 2000 more. Reaction to the toxin locally did not begin until April 3, that is, two days later, but the swelling and the discharge continued about the same. It was noticed on April 3d that pieces of the membrane began to slough off, and the discharge to take on a very offensive odor. From this time on the symptoms slowly decreased, so that by April 12th the swelling had subsided and the discharge ceased, but there was still considerable redness. The constitutional symptoms disappeared within a few days after April 3d. During the whole course of the disease there were no complications in the nose or throat.

Discussion.—Dr. William E. Gamble.—Diphtheritic conjunctivitis is rare in this country. Croupous conjunctivitis is comparatively common. In dispensary practice it is not unusual to see a few cases each year. In these cases we have little fear of injury to cornea. There is practically no danger to the eye. Comparatively recent bacteriological research places these cases in the class diphtheritic. It is true the Klebs-Loeffler bacillus does not penetrate deeply into the tissues as in the severe cases, i. e., diphtheritic conjunctivitis, but they are found in the secretions.

Dr. Lyman Ware had seen a case of diphtheritic conjunctivitis occuring in a child. About one-half of the upper tarsal conjunctiva being covered with diphtheritic membrane and the cornea slightly opaque. This case was treated with Fairchild's trypsin. Under which the child recovered perfectly. It had no trouble with either the throat or the nose, the disease being confined entirely to the eye.

Dr. A. E. Bulson, Jr., of Ft. Wayne, Ind.—Some years ago, while intubating a child suffering with diphtheria, Dr. Bulson had some of the secretion coughed into his eyes. The conjunctiva soon became intensely red, slightly edematous, and attended by photophobia and marked lachrymation. Prompt and persistent use of cold bichloride fomentations caused the inflammation to subside. One of the practitioners in Fort Wayne had a similar misfortune several years ago, some of the diphtheritic membrane being coughed into the eyes, producing an aggravated case of diphtheritic conjunctivitis. The persistent use of cold bichloride flushings and fomentations resulted in complete recovery, though use of the eyes was prevented for several weeks. In this case the systemic disturbance was marked.

We are sometimes in doubt as to whether we have a croupous conjunctivitis or a mild diphtheritic inflammation, and, as mentioned by Dr. Pinckard, the bacteriological examination does not always throw light upon the subject. The systemic disturbance is a diagnostic feature of importance, and a history of infection, attended by the characteristic manifestations, makes the diagnosis certain.

From our present knowledge of the beneficial effects of antitoxin in the treatment of diphtheria it would seem that we have in this remedy a specific for diphtheria of the eye. The treatment will result in no harm, even in doubtful cases, and in the marked cases such as described by Dr. Pinckard, which usually result so disastrously, give the patient the best chance for saving the eyesight. Local antiseptic treatment, early and continuous, is always applicable, and alone may frequently produce favorable results, but we are not doing our whole duty to the patient if this treatment is not supplemented by antitoxin injections.

Dr. W. F. Coleman a few years ago saw two cases of diphtheritic conjunctivitis in children at St. Elizabeth's Hospital, there being at that time many cases of diphtheria in the hospital. In one case the cornea was not involved, and the child recovered with good vision; in the other the cornea was lost. The appearances were characteristic; the children at the time had both nasal and throat diphtheria.

Dr. Pinckard.—In this case the nose and throat were not affected at any time; all that was discovered was a little redness. There was no membrane in the nose or throat. The constitutional symptoms were well marked; temperature was 101.5°; pulse over 100. The morning and evening temperatures were almost the same, not varying half a degree. The constitutional symptoms, after the administration of the antitoxin, disappeared very quickly.

Dr. Pinckard does not know that we have any way of making a positive diagnosis of diphtheritic conjunctivitis. The microscope does not aid us very much. The xerosis bacillus gives exactly the same reaction to the stain that the Klebs-Loeffler bacillus does; it looks the same under the microscope, and without clinical symptoms it would be of no significance whatever. The one fact which settles the diagnosis is the inoculation of rabbits or guinea pigs, because there is no reaction to the xerosis bacillus and there is to the diphtheria bacillus.

Dr. Pinckard reported a case of *Myopia*.

Miss M., aged 17, was first seen February 6, 1899. Until 1898 she has worn, with comfort, for nine years, the following glasses: O. D. + 2.25 ax. 90°, O. S. + 1.50 ax. 90°. Early in 1898 she laid aside her glasses because her vision was just as good without them, and they did not add to her comfort in near work. Until about July, 1898, she noticed nothing peculiar about her eyes, but they then began to hurt her, but no great failure in vision was noticed until shortly before Dr. Pinckard saw her. On examination, O. D. c — 4.75 = 1, O. S. c — 4.50 = 1.

Dr. Pinckard suspected spasm of the accommodation. After using 1 per cent atropine solution for a week he found O. D. c — 4 = 1 O. S. c — 3.75 = 1.

The skiascopic mirror gave negative results; the ophthalmometer showed astigmatism 0.50 D with the rule.

Not satisfied as to the spasm, 2 per cent atropine solution was applied three times daily for 10 days, but with no change in the results compared to the last examination.

The fundi showed no changes except slight tortuosity of the lower temporal vein in each eye. There was no crescent. The case has been seen repeatedly since, but there has been no change since February 6th.

The remarkable thing about the case is the total disappearance of such a considerable degree of astigmatism. For many years it was believed that astigmatism did not change, but such cases as this force the conviction that changes are not so uncommon as was thought.

Discussion.—Dr. A. E. Bulson, Jr. of Fort Wayne, Indiana, believes that many people wear glasses that have no relation to the kind or amount of error present. Dr. Pinchard's case reminds him of one that came to his notice a few weeks ago in which a young factory girl came complaining that she could not see as well at a distance as she thought she ought and requested examination to discover the cause of trouble. Vision was $\frac{10}{200}$ in each eye, and slightly improved with minus two dioptre cylinder, axis 180 degrees. Under atropine minus five dioptre cylinder, axis 180 degrees, was accepted, and this astigmatism verified with the ophthalmometer. The glasses produce a marked improvement in vision and are worn with comfort. Previous to coming to me she had worn with reported comfort, but with no improvement of vision, a plus spherical of about one dioptre, combined with a plus cylinder of about the same strength, axis 90 degrees. The patient is of phlegmatic temperament, somewhat illiterate, and never knew what it was to see well. While the myopic astigmatism may have been progressive, it is more than likely that the error was present at the time the optician adjusted the compound hypermetropic lenses which were tolerated for several years.

Cases of this character are frequently seen in consequence of ignorance on the part of opticians or undue carelessness on the part of ophthalmologists, but it is seldom that a patient will contentedly tolerate a correction of such character for any length of time.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

ABSTRACT REPORT.

New London, July 19, 1899.

The meeting was called to order by the President, Dr. O. F. Wadsworth.

A Description of the Reflecting Phorometer and a Discussion of the Possibilities of Torsion in the Eyes.—Dr. F. H. Verhoeff, of Baltimore—(Presented by invitation of the society.)—The instrument differs from other phorometers in that mirrors are used in place of prisms, thus permitting of the greatest simplicity in construction, together with the most advantageous movements in the apparent images. There are four mirrors, two for each eye. By turning a milled screw, the lower mirrors may be made to rotate toward or away from each other so as to produce lateral separation of the images. It is to be noted that this arrangement produces equal though opposite movements in the two images. Vertical separation of the images is produced by rotation of one of the upper mirrors. The parallax text of Duane has been adapted to this instrument, and a very important feature of this phorometer is a shutter which slides back and forth before the eyes, so that when in use the patient can see with but one eye at a time. The shutter is moved back and forth very quickly, a pause being made, however, before each eye so that time is given for the after image to disappear, and the patient is asked to state whether the object moves or not. If he sees the object apparently moving obliquely, the upper mirror is adjusted until the movement is horizontal, and then the lower mirrors are adjusted until practically all movement is overcome. Both the amount of hypephoria, and also the esophoria or exophoria, if present, will be indicated upon the scales. It is thus possible by means of the reflecting phorometer to determine the amount of heterophoria either by the diplopia test or by the shutter test, and, in addition, the amount of abduction, adduction, and right or left sursumduction may be readily obtained.

By means of a special chart, consisting of two rotary discs placed one above the other, the instrument may be used to determine and measure any possible torsional deviations in the eyes. It was shown that by means of the instrument an artificial torsion could be produced in the retinal image of any object regarded. In this way it was determined that the eyes can bear, without discomfort, a tilting of the retinal images in two eyes equivalent to a torsion of 8.

Four experiments were described to prove that torsional combining power or an ability to so rotate as to overcome artificially produced declinations, and cyclophoria do not exist. Since the fusion of lines situated upon non-corresponding points of the retinæ is not due to torsion of the eyes it was spoken of as being due to psychical compensation.

Dr. Veerhoeff believes that the existence of a torsional combining power has been assumed by Stevens without sufficient evidence, and that Savage has fallen into error in assuming the existence of cyclophoria.

Congenitally Inefficient External Rectus and Binocular Vision.—Dr. J. O. Tansley, of New York.—The patient was a strong, healthy young man. Asking him to look at and follow it was seen that the left eye had perfect motility, but that the right eye, although it had perfect movement upward, downward and nasally, could not be moved quite to the median line outwardly. He had binocular single vision in any part of the left field, but a pencil held directly in front of him appeared double, and the farther it was moved to the right the greater was the diplopia. The diagnosis was congenital absence or atrophy of the right external rectus. A tenotomy was performed upon the right internal rectus in the hope of overcoming the necessity of turning the head to the right, but the conditions were not much improved.

The second case was reported in which the patient always turned his head to the left or eyes to the right when doing close work. Examination showed that he could not rotate the left eye outwards quite to the median line. All other movements were normal. The condition here also seemed to be congenital atrophy or absence of the external rectus.

A Case of Primary Tumor of the Optic Nerve.—Dr. F. Buller, of Montreal, Canada.—The patient was a boy six years of age, in good health, save for some slight nervous disturbances. The right eye presented a high degree of proptosis, and the exposure caused constant irritability of the eye. The ophthalmoscope showed the optic nerve entrance apparently much larger than normal, of a pale bluish-white tint, with oval outline and irregular margins. Palpation revealed within the orbit a large, somewhat elastic mass without distinct outline. These symptoms, together with the complete blindness, pointed to the presence of a tumor involving, if not originating in, the optic nerve. Removal was attempted by severing and drawing aside the internal rectus, but it became necessary to enucleate the eye with the tumor mass which surrounded the optic nerve. The patient made a good recovery, and one month later was reported to be in good health and quite free from nervous attacks.

A pathological study of the tumor showed that it belonged to that class usually described as myxo-sarcomatous, but the changes in the optic nerve at least are to be looked upon as due to a chronic distension of the lymph spaces, and it is suggested that possibly the whole condition was due to some localized disturbance of the lymphatic system.

Discussion.—Dr. Reeve, of Toronto, Canada, said that he had seen last summer an interesting specimen in the Birmingham Ophthalmic Hospital of a tumor of the optic nerve from a patient who had excellent, if not normal vision.

Dr. Buller stated that this was a third case he had seen, and he had considered the loss of vision with complete atrophy one of the diagnostic features of optic nerve tumors.

A Case of Primary Non-pigmented Sarcoma of the Left Upper Lid.—Dr. C. A. Veasey, of Philadelphia.—This patient was a Polish tailor 45 years of age, who had observed a small growth on his eyelid four months previous to his visit. It resembled a chalazion in many respects, and was adherent to the overlying skin, but movable over the tarsus. It was dissected out, and the microscopical examination showed it to be an encapsulated non-pigmented spindle-cell sarcoma. A review of the literature discloses the records of only about fifty cases, 38 per cent of which were spindle-celled, 38 per cent round-celled, and 24 per cent mixed.

An Instrument Intended to Facilitate the Operation of Capsulotomy.—Dr. F. Buller, of Montreal.—The instrument consists of two needles exactly parallel with each other, not more than 0.25 mm. in diameter and exquisitely sharp. It is used in the following manner: First the pupil is dilated, if possible with atropine; then a careful inspection is made by focal illumination to find the weakest and the strongest parts of the capsule to be divided, bearing in mind that the aperture to be made must be as nearly as possible central. The double needle is passed through the cornea at any convenient point to the central edge of the denser portion of capsule and the Knapp needle-knife passed through the sclero-corneal junction to the line of its incision through the thinnest part. This incision being completed, the cutting needle is then passed between the limbs of the double needle and made to cut the denser capsule by one sweep. The double needle is to be withdrawn first, and then the cutting needle.

The advantages claimed are a large, clear central aperture, without traction on the zonule, and very slight reaction.

Discussion.—Dr. Myles Standish, of Boston, said that he had tried some years ago to use a double needle in this way, but had found considerable difficulty to cut the capsule without pushing it before the instrument, and he had abandoned the method. He thought it difficult to make equal pressure with the two limbs of the needle, and therefore one frequently entered, while the other did not.

Dr. Buller stated that he did not attempt to cut the capsule with the points of the needle, but merely exerted enough pressure to steady the capsule.

A Case of Expulsive Intra-ocular Hemorrhage after Preliminary Iridectomy for Cataract.—Dr. R. L. Randolph, of Baltimore.—This accident occurred on the third day after an iridectomy preliminary to cataract extraction. The patient was 76 years of age, in good health, and had a mature cataract in the right eye and commencing opacities in the left. Iridectomy was performed with perfect satisfaction, and for two days the patient did well. On the third day she suffered a great deal of pain, and on inspection it was found that the corneal wound was bulging, the anterior chamber was obliterated, the lens was pushed forward and the iris was resting against the posterior surface of the cornea. On the following day it became necessary to extract the lens, since the condition was steadily becoming worse, and no sooner was the section completed than the lens was ejected with great force and a mass of vitreous immediately followed. The corneal flap was replaced and light compresses applied, but healing took place slowly and a shrunken eyeball resulted.

In the course of six months glaucoma of the left eye set in, and, in spite of treatment, advanced rapidly to blindness. It was not thought wise to attempt an iridectomy in view of the experience with the right eye, but the pain became so intense that paracentesis of the vitreous was performed twice, and although the eye remained hard, the pain entirely disappeared.

The development of the glaucomatous condition of the left eye seems to justify the conclusion that the same condition was present in a milder stage in the right eye at the time of operation.

Discussion.—Dr. B. E. Fryer, of Kansas City, said that he had met with several cases of hemorrhage after cataract extraction, and he thought it was interesting to note in this case that the very slight change of pressure following an iridectomy could produce a hemorrhage in these cases that are so predisposed.

Dr. T. Y. Sutphen, of Newark, N. J., reported a case of hemorrhagic glaucoma in which he had undertaken to make an iridectomy, but had a profuse loss of vitreous and final destruction of the eye.

Dr. W. H. Carmalt, of New Haven, Conn., asked if there had been any examination of the kidneys and of the arterial system in these cases·

Drs. Randolph and Fryer both replied that they had made urinary analyses without finding albumen.

Dr. Benjamin L. Milliken, of Cleveland, Ohio, reported a case of hemorrhage occurring on the sixth day after extraction without serious results, the hemorrhage gradually clearing up.

Dr. Reeve referred to a case in which he had operated upon the second eye successfully by first doing a paracentesis, then an iridectomy, and finally extraction, with good results.

Dr. O. F. Wadsworth, of Boston, Mass., reported a case of profuse hemorrhage after iridectomy, which compelled him to abandon his operation. The wound healed perfectly, however; the hemorrhage cleared up and extraction was done later.

Retinitis Albuminurica as a Factor in the Causation of Secondary Glaucoma.—Dr. C. S. Bull, of New York.—The connection between retinal hemorrhage and secondary glaucoma is recognized by all, but the connection between retinitis albuminurica and secondary glaucoma does not seem to be so clearly recognized. The connecting link is probably more or less extensive disease of the walls of the blood vessels, which may be regarded as a common cause of both the retinitis and the hemorrhages. It is generally conceded that interstitial nephritis is the variety usually accompanied by retinal hemorrhages, and in this form of nephritis the general constitutional symptoms vary greatly in different cases. Albuminuria, the most certain sign, is occasionally absent, and when present is slight in amount and not easily detected. Two symptoms are rarely absent, however, and these are cardiac hypertrophy, with a doubling of the first sound, and certain cerebral phenomena. The most frequent head symptom is a continuous frontal or occipital headache. When these symptoms are found the urine should be subjected to frequent analysis.

In looking over the literature of hemorrhagic glaucoma he found that many of the published cases were marked by these symptoms. In almost all the cases of secondary glaucoma preceded or accompanied by retinal hemorrhages and exudation, it is quite impossible to decide whether the glaucoma is really secondary to the hemorrhages or whether the two are simply associated together.

Dr. Bull then reports in detail four cases of acute glaucoma following exudative retinitis albuminurica.

Discussion.—Dr. J. S. Prout, of Brooklyn, N. Y., suggested that possibly we could gain some knowledge of the cause of glaucoma if we could follow up a number of cases and see what the patients eventually die of.

Dr. Wadsworth reported one case of secondary glaucoma in both eyes in which he had been able to follow the patient's history until she died of acute pneumonia, but at no previous time had she been a subject of any discoverable disease.

Dr. Lucien Howe, of Buffalo, N. Y., brought up the question of heredity as a factor in the causation of glaucoma, and reported one family with eight cases of secondary glaucoma in three generations.

Dr. Wm. F. Mittendorf, of New York, said, concerning heredity, that the Hebrew population is extremely prone to this disease.

On Anomalies in the Epithelial Layer of the Crystalline Lens and Anterior Polar Cataract.—Dr. A. Alt, of St. Louis.—Dr. Alt reviewed the various theories concerning origin of anterior polar cataract, and said: "It seems to me that contact between the anterior lens capsule and the posterior surface of the cornea, whether this membrane be otherwise healthy or infiltrated with pus, even if it be prolonged, cannot alone be the cause of the formation of an anterior polar cataract. If it was it should occur at least now and then after a perforating injury of the cornea, and with more frequency after ulcerative perforation of this membrane."

He was not inclined either to accept the theory of intra-uterine corneal perforation as an explanation of the congenital cases, in view of the fact that heredity seems to play such an important part in their history. As a result of his examinations of these eyes, he is inclined to believe that the prime cause of the formation of an anterior polar cataract is some congenital malformation of the lens, and that this represents a break in the continuity of the capsular epithelium layer, as well as a dissolution of contact between this layer and the lens capsule. With such a pre-existing anomaly, the lens capsule would be in the same condition as Descemet's membrane after a loss of continuity in its endothelial lining, and this would permit of the penetration of substances into the lens which might be followed by the formation of cataract.

A Method of Converting the Alternating Current, for Use in Connection with the Johnson Magnet.—Dr. W. B. Johnson, of Paterson, N. J.—The portable electro-magnet devised by the author, and described in the May number of *Knapp's Archives*, is only of use in connection with a direct electric current of 110 or 120 volts, and consumes ½ ampere of current. Municipal lighting in many cities is accomplished entirely by the alternating current, and as some means of converting this into a direct current is essential to the adoption of this or any other magnet for general use, the following method is suggested:

A ¼-horse-power fan motor adapted to the alternating current is to be fitted with a pulley, belted at a distance of three feet to a pulley attached to a ⅙-horse-power fan motor, wound for the direct Edison current; the speed of the motors must be the same. The Edison motor acts as a generator and furnishes the ½ ampere of current at 110 volts necessary to fully saturate the core of the magnet. The probable cost of such an appliance would be about $50.

The Johnson magnet was exhibited and is offered as a substitute for the Haab magnet, being less cumbersome, equally strong, portable, and more easily adapted to use in cities having alternating currents, as it requires only ½ ampere of current, while the Haab requires 10 or 12, and needs a motor and generator of several horse-power.

Report of Three Cases of Magnetic Extraction of Steel from the Eyeball, Through the Point of Entrance.—Dr. W. B. Johnson, of Paterson, N. J.—In all three cases large pieces of metal were removed from the eye without difficulty by the Johnson magnet. In every instance considerable pain was produced as the magnet first approached the eye, and in the second case the wound of entrance having become partially closed had to be enlarged. The largest piece of metal was ⅜ of an inch long by ⅛ inch wide.

Discussion.—Dr. Howe said that he had had some difficulty with other magnets in that when the foreign body was drawn up to the wound it was scraped off as the magnet was withdrawn.

Dr. E. E. Holt, of Portland, Me., said that he had been able to overcome that difficulty by having an assistant open the edges of the wound with a small Stevens' strabismus hook.

Dr. Johnson suggested the advisability of enlarging the wound of entrance before attempting to remove the bit of metal from the vitreous.

Dr. Geo. C. Harlan, of Philadelphia, spoke of the necessity for attempting the removal as soon as possible after the injury and before the foreign body can be bound down by exudative material.

A Cyst of the Vitreous (with patient).—Dr. J. O. Tansley, of New York. —On ophthalmoscopic examination a floating spheroidal body about the diameter of the optic disc could be seen in the center of the vitreous chamber. When the eye was quiet it slowly settled to the lower part of the cavity and remained there in contact with the retina, but the slightest movement of the eyeball caused it to move rapidly about. The cyst had a distinct capsule which was pigmented in spots, and the spots on the posterior capsule could be seen through the transparent anterior capsule and cyst contents. It was apparently benign.

Discussion.—Dr. Alt, of St. Louis, suggested that it might be an adenomatous tumor detached from the ciliary processes and undergoing mucoid degeneration.

Dr. B. A. Randall, of Philadelphia, thought it was more likely a detached cyst, such as are occasionally seen at the edges of a coloboma, and which had been set adrift by a process of closure of the congenital cleft.

A Case of Sympathetic Ophthalmia due to Glioma Retinæ in the Fellow Eye.—Dr. A. Alt, of St. Louis.—The patient, a child of five years, had one year previously had the left eye removed because it was blind and was the source of irritation to the right eye. When seen by Dr. Alt there was well marked sympathetic ophthalmia with blindness in the right eye. After treatment by mercurials and iodides a marked improvement took place in the eye so that the child was able to count fingers at eight feet, but his general condition did not improve, and in a few months two small growths appeared in the left orbit. The enucleated globe was obtained, and an examination of it as well as pieces of the new growth showed gliomatous tissue. Cases of sympathetic ophthalmia due to intraocular growths are rather uncommon.

Cases of Metastatic Panophthalmitis.—Dr. B. L. Millikin, of Cleveland, Ohio.—Case one was one of typhoid fever, with monocular irido-choroiditis and severe earache and headache. Although there was no autopsy, it seems likely that the panophthalmitis in this case was by extension from some meningeal involvement.

In case two there was monocular panophthalmitis, probably due to a septic endocarditis, although the systemic diagnosis was not certain.

In the third case there was binocular panophthalmitis in connection with a fatal pneumonia. In the second and third cases it is probable that the eye disease was embolic in character.

Discussion.—Dr. Fryer said that these metastatic cases would seem to be due to some peculiar forms of sepsus. During the Civil War he had seen a large number of cases of pyemia, but remembered only one case in which there was metastatic trouble within the eyeball.

Dr. Randolph referred to a case which he reported three years ago of panophthalmitis occurring in a child nine months of age, and in whom it was impossible to determine a cause for the disease. The only disease the child could have had was possibly la grippe.

A Case of Spontaneous Rupture of the Eyeball.—Dr. B. L. Millikin, of Cleveland.—The patient, a woman aged 68 years, had for a number of years complained of neuralgic attacks in the head. In January, 1896, she had an acute attack of pain in the left eye, and within a week a similar attack in the right. There was rapid loss of vision, and since then she has been blind. The tension in both eyes was plus 3.

On January 4, 1898, while sitting quietly in her own room, she had an acute attack of pain in one eye, followed immediately by spontaneous rupture of the globe and profuse hemorrhage. The rupture was a nearly vertical one through the center of the cornea from the lower margin of the pupil upward into the sclera.

Multiple Rupture of Sphincter of Iris with Subsequent Development of Myopic Astigmatism.—Dr. W. F. Mittendorf, of New York.—In this case there were six distinct ruptures of the pupillary border, but no unusual dilitation of the pupil except at the seat of the ruptures. After the injury had healed a myopic astigmatism of three Ds. was observed, with the axis of the cylinder in the direction of the most pronounced rupture. The eye was apparently normal before the injury, and the ophthalmometer showed a normal cornea afterward, so that the astigmatism must have been lenticular.

Normal Pupillary Reaction, with Microscope for Its Measurement.—Dr. Lucien Howe, of Buffalo.—In regard to the measurements in pupillometry those made with the naked eye are entirely unreliable. The ophthalmometer requires too bright a light, and the best form of instrument is that in which the scale is fixed in a tube of a microscope or of a telescope. The instrument here presented gives us a great amplification with a flat field, and the slightest variation in the size of the pupil can easily be detected and measured. This instrument had already been described by the writer as a microscope for viewing the eye.

The Value of Acoin as a Local Anesthetic in Eye Surgery.—Dr. R. L. Randolph, of Baltimore.—(This paper appears in full on page 401.)

Discussion.—Dr. Lucien Howe objected to the inaccurate methods of expression we are drifting into concerning the effect of local anesthetics, and called attention to an article published some years ago in the *Archives of Ophthalmology*, explaining a method by which we can obtain a numerical expression of local anesthesia.

More Uniform Tests for Vision, Color Sense and Hearing.—Dr. C. H. Williams, of Boston.—In rearranging the tests for one of the New England railroads, Dr. Williams found it necessary to have a new set of letters carefully drawn, so that the height of each letter should subtend the standard visual angle of five minutes, and the width of its component parts an angle of one minute, as shown by Prof. Snellen to be the angles at which letters should be easily read by normal eyes. In order that these cards should be in portable shape the letters were printed on cards of 3½ by 9 inches, which can be readily placed in an envelope that will go into the coat pocket. One line of letters only was printed on each card, and a different arrangement of letters for each of the required distances of 20, 30 or more feet was adopted for each card in order to prevent memorizing. Another feature of these cards is the addition of three cards on which are printed representations of the ordinary semaphore arm signals, the length and width of the arms being the same as the height and width of the letters on the 20-foot card, and when seen at a distance of 20 feet they correspond in size to the apparent size of a standard semaphore arm 46 inches long and 7 inches wide when seen at a distance of half a mile.

These is need of greater uniformity in the tests used for the color sense, and it is stated as a general proposition that no test for color perception is satisfactory unless it concludes, first, a test by comparison of colors, the Holmgren worsted test being perhaps the best, and second, a test with colored lights, in which the intensity of the lights can be varied and in which the names of the colors shown should be given by the person examined.

Dr. Williams then exhibited a lantern which he had devised for making this test for colored lights, and to show the danger of relying on one test, reported some cases which had passed the confusion color tests with worsted, but failed with the lantern test. With the lantern it is possible to detect a very small central color defect which would not be noticed when testing with the worsteds, because their image would cover a larger area than that affected, and hence be recognized.

In order to have a more uniform test for hearing, a ratchet acoumeter has been devised which produces a series of sharp metallic sounds by turning the milled head.

In regard to the use of spectacles by trained engine or yard men, there can be no objection to their use for reading train orders, etc., but for distant vision, for the proper reading of a signal which may be rapidly approaching, and under all the varying conditions of weather, such as fog, rain and snow, it will be found that when the need of assistance from the glass is greatest, they will often be a hindrance rather than a help;

the moisture condensing on the glass will obscure the vision, and the tendency will be to remove them and depend upon unaided sight.

Although it may be a hardship in some cases, it will be safer to require for the re-examination of men in the service a vision of not less than 20/30, with both eyes open, without glasses, for engine men and firemen, and a vision of not less than 20/40 under the same conditions for others engaged in operating trains.

A Modified Perimeter.—Dr. C. H. Williams, of Boston.—This consists of the ordinary self-registering perimeter, with electrical attachments, small incandescent lights being used both for fixation and for the movable point on the arc.

Adjournment.

A TYPOGRAPHICAL ERROR.—In the July number of the OPHTHALMIC RECORD, upon page 348, seven lines from the bottom, please read "Tenotopaths," instead of "Tenotomopaths."

Kyle briefly reports some of the experiences met with by him during the Spanish-American war as army surgeon—the difficulty of detecting ocular defects in recruits, the need of instruments for the treatment of such conditions, etc. He found in Matanzas that the great majority of cases of conjunctivitis that occurred, on microscopic examination, confirmed the statement of Gifford that the pneumococcus is the most frequent cause of the disorder.—*Columbus Med. Journ.*, abstracted in *Journ. of the Am. M. A.*

DETACHMENT OF RETINA.—Foster reports a case of retinal detachment, and discusses the condition and the views that have been expressed in regard to its origin and treatment. He concludes that the mode of occurrence is uncertain, as is likewise the pathologic process, which is its actual or exciting cause. As regards treatment, he thinks absolute rest the most essential factor, and it must be secured in bed with the eyes covered with a pressure bandage, whatever other treatment is employed. In cases of this sort we must endeavor to determine, if possible, the actual cause and restore the best degree of vision in our power. If traction bands exist in the vitreous, they may be divided; if serous accumulation is great, it may be evacuated; but our main reliance is still rest in bed, whatever depleting or other methods adopted.–*Am. Journ. Med. Sciences* for May, abstracted by *Journ. Am. Med. Asso.*

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. Harry Friedenwald, Baltimore, has returned from a four months' tour of European hospitals.

Dr. Jay C. Knipe has been elected to the consulting staff of the ophthalmic and aural department of the Jewish Hospital, Philadelphia.

A statue of Helmholtz, in front of the building of the University of Berlin, was unveiled on June 6th in the presence of the Empress Augusta Victoria and the Crown Prince.

Hard Service.—An ex-postmistress out West is said to be suing the Government for a pension for having ruined her eyesight reading the postal cards which passed through her hands.

Dr. Rorert L. Randolph has been awarded the Alvarenga Prize at the College of Physicians of Philadelphia, for his essay on "Regeneration of the Crystalline Lens; An Experimental Study."

Dr. Webster Fox, Philadelphia, is in Europe. While away he will attend the meeting of the British Medical Association, and also the International Ophthalmological Society at Utrecht, Holland, in September.

Dr. James Moores Ball, St. Louis, Mo., will attend the International Ophthalmological Congress, which convenes in Utrecht, in August. He will read a paper before the congress on "Excision of the Cervical Sympathetic for Glaucoma," reporting four operations, which are believed to be the first made in this country.

A freak of nature in the form of a colt without eyes has been foaled on the farm of Thomas Burns, of Moonshine township, Minnesota. Where the eyes should be there is a reddish substance, but nothing resembling eyeballs. In other respects the colt is perfectly formed, and a lively, healthy animal. The dam is a shire. Many have visited the freak, and horsemen are puzzled over the deformity.

GLADSTONE'S BIRD EYE.—An English journal of the icteric type recently published a notice of Mr. Gladstone, in which it mentioned, as a partial explanation of his power in debate, that he had nictitating membranes in each of his eyes, and that he could by winking them during argument so startle his opponent as to leave him speechless.

REMOVAL OF THE BLIND ASYLUM.—The managers of the New York Institution for the Blind, in Ninth avenue, between Thirty-third and Thirty-fourth streets, have decided to remove the seat of the institution from its present ground to a tract of thirty acres, between One Hundred and sixty-eighth street, Eleventh avenue and the Hudson river.

TREATMENT OF EXOPHTHALMUS BY LIGATURE OF CAROTIS.—There are fifty eight cases of exophthalmus on record, treated by ligating the carotis communis, with twenty-six cures. Bodon reports two more, both successful. In one the affection persisted until the carotis on both sides was ligated. The dilated vena ophthalmica was resected on account of violent, continuous headache.—*Deutsche Ztft. f. Chir.*, li. 6.

BALTIMORE EYE, EAR AND THROAT CHARITY HOSPITAL.—According to the seventeenth annual report, just issued, this institution is in a very flourishing condition. The hospital was opened in September 1882, following by some years the Presbyterian Hospital working in the same field. A handsome new building was occupied in April, 1898. The total number of patients treated during the year was 3,702. Of these, 2,124 were white and 1,578 colored; 2,581 were affected with disease of the eyes, 714 with disease of the throat, and 407 with affections of the ears. The attendance at the dispensary reached a total of 11,219, viz.: 9,157 in the eye and ear and 2,062 in throat department. The 467 surgical operations included 329 on the eyes, 92 on the ear and 46 on the throat and nose. The total number of days' board furnished patients was 1,649—546 of those being paid for in part or full and 1,103 furnished free. Since the opening of the hospital in 1882, 39,992 patients have been treated and 4,483 surgical operations performed, and the aggregate attendance in the dispensary has reached a total of 133,970.

EXAMINING EYES OF CHILDREN.—Few children would escape if the eyes were examined in the primary grades. Besides the benefit of discovering and curing ocular troubles in the incipient stage, there is the additional benefit of warning parents of incurable affections which would forbid certain trades or professions, thus preventing useless expense and disastrous consequences. H. Cohn, of Breslau, has recently published a tabulated report of the eyes of every school child in Breslau (50,000). He considers it very important that the examinations be made in the open air.—*Journ. Amer. Medical Asso.*

FRENCH CONGRESS OF OPHTHALMOLOGY.—Among the communications presented at this congress, held at Paris recently, was Antonelli's report of fine results obtained in lachrymal affections with very small sounds made of gelatin and 50 per cent protargol. Rohmer warmly indorsed the practice of open treatment of the eyes after operations for cataract. He has fully established that the natural occlusion of the lids and the lachrymal secretions maintain the aseptic conditions realized, while the daylight favors the contraction of the pupil and lessens the danger of hernia of the iris. He has his patients wear a small, light, loose curtain bandage over the eye, merely as a reminder not to touch them with the fingers. Gourfein stated that the lachrymal sac in rabbits can be infected with solid cultures of Koch's bacillus. De Wecker described his successful efforts to divert the exosmotic current traversing the retina, attracted by the excess of salts in the vitreous body, which he assumes may be the primary cause of detachment of the retina. He injects for this purpose salt solutions under the conjunctiva and the capsule of Tenon, preferring sodium sulphate and gelatin. This treatment favors spontaneous cure, and can do no harm.—*Journ. Amer. Med. Asso.*

THE OPTICIANS' PROTEST.—The Optical Society of the State of New York at its annual meeting last week passed some resolutions protesting against the condemnatory resolutions of the American Medical Association at Columbus and of the American Institute of Homœopathy at Atlantic City, and declaring that the society believed that "the honorable occupation of an optician entitles him to the same courteous consideration at hands of medical men as that now accorded to those following dental and other mechanico-scientific callings."—*N. Y. Med. Record.*

SEVERAL members of the crew of the British ship Aladdin, which arrived here from Tagal and Cheribou with 7,458 bags of sugar, in command of Captain Rutter, are affected with a peculiar blindness at night, which is thought to have been caused by the fumes arising from her cargo. When in the tropics under the powerful rays of heat the sugar steamed considerably, and to this is ascribed the peculiar affection. This, however, is not Captain Rutter's opinion, as he claims it to be the result of the excessive use of strong tobacco. Be this as it may, it is nevertheless a fact that physicians are puzzled over the cases, which are the first that have been brought to their attention. In the daytime the affected sailors can see perfectly, but at night everything is shut off from their vision, and they are helpless in the way of handling the ship.

It was when in the vicinity of the equator that the eyesight of several of the crew became so peculiarly affected, and Captain Rutter and his officers have since spent many days of extreme anxiety in fear that all hands would become similarly stricken.

These men when walking about at night would stumble over hatch combings or anything else that might lie in their way, so blind had they become, but the instant the sun arose their sight was restored.

Those familiar with the subject of deep-sea ships say that while the experience of the crew of the Aladdin is somewhat novel, it is not without precedent, and that it is due wholly to the poisonous fumes that arise from the sugar when the vessels carrying it are in the heat of the tropics.—*Philadelphia Press.*

Why So Many Young People Wear Glasses.—Hulen, after noticing the common eye defects relieved by glasses, and stating that in many cases people are wearing glasses who do not need them, or such as they do not need, concludes: 1. That the eyes of children in the schools are more taxed than they formerly were, and eye-strain brings out troubles which would have been unknown had the demands on the eyes been less. 2. Because of the defective lighting of large cities, which, with a less robust population, severely strains the optic apparatus. 3. Because physicians are beginning to notice defects and correct them. 4. Because with all of the above there are more inheriting optic weakness than was formerly the case.—V. H. Hulen *in Pacific Record of Medicine and Surgery, abstracted from Journ. Am. Med. Asso.*

Excision of the Right Superior Cervical Ganglion of the Sympathetic for Glaucoma.—The authors of this paper report what they consider to be the first operation in this country to excise the superior cervical sympathetic ganglion for glaucoma. The ganglion was cut high up and all its branches severed, and about one inch of the sympathetic below the ganglion was removed. The patient was immediately relieved from pain and the tension decreased to plus 1. Slight ptosis followed the operation. They think that the relief from pain alone will justify the operation and in glaucoma without complete loss of vision; they will operate upon the first favorable case. The paper concludes with a discussion of the literature on the subject and a brief bibliography.—*N. Y. Med. Journ., abstracted from Journ. Amer. Med. Asso.*

Holocain as Local Anesthetic.—Guttmann gives his experience with holocain, which he thinks is to be decidedly preferred to cocain, not only on account of its producing less disagreeable symptoms, but as safer and almost equally efficient. It has special advantages for persons addicted to the cocain habit. He has employed it instead of cocain in about one hundred and fifty eye operations, and never observed the slightest toxic or alarming manifestations, it is not advisable, according to some writers, to use it hypodermically, and it cannot, therefore, replace cocain, but under certain circumstances is to be preferred to it.—*N. Y. Med. Journ., abstracted by Journ. Amer. Med. Asso.*

A telegram from Petoskey, Mich., dated July 19th, informs us of the heroic action of Dr. Arthur E. Prince, the distinguished ophthalmologist, of Springfield, Ill. It seems that Dr. Prince and Fred Odiorne, a young man of 17 years of age, also from Springfield, Ill., left Harbor Springs the morning of July 19th in a sailing canoe, in which they were coasting from Holland to Mackinac Island. Twenty miles up the shore the canoe was capsized in a squall. Both men made a struggle for life, the doctor holding the boy on his shoulders to keep his head above the waves which dashed over the capsized boat. After several hours had passed Dr. Prince succeeded in unshipping the masts, righting the canoe, and seating the boy in the boat. By this time, however, his companion was delirious, and death relieved his sufferings. Some time later C. S. Barton, of Harbor Springs, on his way to Mackinac Island with his naphtha launch, discovered the drifting canoe, with the corpse of the body of the boy inside, and the doctor, more dead than alive, clinging to the boat, and he brought them to Harbor Springs.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, SEPTEMBER, 1899. No. 9. NEW SERIES.

ORIGINAL ARTICLES.

ALBUMINURIA AND ITS RELATION TO DISEASES OF THE EYE.*

BY ALEX. W. STIRLING, M.D., C.M., EDIN., D. P. H., LOND., ETC.
ATLANTA, GA.

The various forms of albuminuria do not bear an equally close relationship to diseases of the eye, but in that connection they all have some interest. Eye diseases, on the other hand, sometimes throw much light on albuminuria and enable us to elucidate the true import of symptoms which might otherwise pass as trifling. Albuminuria, it should be remembered, is of quite common occurrence in the general population. Before its precise frequency among young people was known, when a reaction was setting in some ten to fifteen years ago against the hitherto generally-accepted idea that renal albuminuria always meant serious derangement of the kidney, some were inclined to go to the other extreme and look upon it as lacking in pathological significance in the majority of cases. At this period such names as the "Physiological Albuminuria," the "Albuminuria of Adolescence," "Cyclic Albuminuria," and so on, were applied to the condition, but these carried no explanation with them. With the view of discovering the real frequency of albuminuria in apparently healthy people, I instituted, in 1887, a series of experiments upon the urine of 461 persons. The greatest care was taken to avoid error, and no urine was passed over till I was completely satisfied whether

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*Read before *Georgia State Medical Association*, at Macon.

a precipitate were albumen or not. I have no intention of going fully into this matter, an epitome of which can be found in the London *Lancet* (December 10, 1887), along with complete figures in tabular form. But I wish to say a few words which are apropos of my present subject. In one class of 369 boys, in age varying from 12 to 16 inclusive, there were 77 albuminurics, or 20.8 per cent. I desired to find the cause of this. I eliminated George Johnson's cold-bath theory. I proved that it was not produced by food. I found that the urine passed before rising in the morning contained no albumen, but that soon after rising albumen was present, disappearing gradually toward evening. It could be made to disappear at any time by merely causing the patient to lie down, and it would never occur at all throughout the day if he remained recumbent. It will be observed that these experiments were carried on upon the supposition that posture might have something to do with the presence of the albumen. And this was conclusively proved to be the case. Indeed, posture had everything to do with it, for which reason I proposed the name "Postural Albuminuria." This name I find is now in common use by writers in English, German and French journals. There can be little doubt that, as I at first suggested, the albuminuria results from a temporary paresis of the renal vessels, but I by no means wish to be understood as meaning that this albuminuria is truly physiological. I have always held that, as there are of course degrees and kinds of renal lesions, this is merely that stage or form which is of least serious moment, though its ultimate development has not yet been laid bare. A considerable number of these urines were examined microscopically for tube casts, but except once or twice, when hyaline casts were doubtfully present, none were found. In the annual "Lettsomian" lecture last month, in which he makes frequent use of my figures, Dr. Samuel West, the lecturer for the year, remarks that in these cases the albumen is generally serum albumen, and not nuclio-albumen, which latter it is thought by some might come from the urinary passages and not from the kidney, though of this there is no proof whatever. When making my experiments I noticed that a much larger number of the boys who played wind instruments were albuminurics than of those who did not, everything else being the same. The figures were, respectively, 59.4 per cent. and 12.8 per cent.; this I put down to backward pressure. Sir T. Granger Stewart, of Edinburgh University, has since confirmed this observation, though his percentage among band players was not so high as mine. I had a letter some time ago from Dr. Theodore Maxwell, of Woolwich, who is a Russian scholar, informing me that Dr. Weinbaum, of St. Petersburg, had recently examined school boys and had found an even larger percentage than I did, "and among bandsmen in the army his percentage is very high." Dr. Maxwell made an abstract of Dr. Weinbaum's paper for the *Lancet*, but I have never seen it. My observations, to which reference has so far been made, were in connection with adolescents, but at the same time I also as carefully examined 92 other persons at various ages up to 94 and of both sexes. This did not show that adolescence is the period of life most prone to albuminuria; on the contrary it showed that it is more common in middle and still more in advanced age than it is in youth. Dr. West has illustrated by means of a chart my figures in this lecture alongside his own more recent ones (336 persons examined for him by Dr. Levison), and Mahomed's, showing the proportion of granular to healthy kidneys. Dr. West's and my own agree in gradually ascending till at the ages of 70 or 80 some 70 or 80 per cent of those examined had albuminuria.

It is important to observe that Mahomed's curve remarkably resembles ours. As I have already said, it would be unwise to look upon "physiological" albuminuria as truly physiological. It has not been proven that even in a minority of cases the patients ever get rid of it, and as albuminurics increase with age it is improbable that they do. It indicates a weakness of some kind, and, as West shows from an array of figures from insurance offices, at ages from 20 to 40, as well as over 40, "even a trace of albumen in the urine is of considerable significance. It is more and more likely to mean disease as age advances." We must bear in mind that in granular kidney albuminuria may be scarcely noticeable, and even absent for a time. And this is the form of albuminuria which of all others affects the organs of vision. This suggests how advisable it is in certain eye diseases to make repeated examinations of the urine in the absence of albuminuria and, seeing that the condition of the eye not infrequently first indicates the condition of the kidney, how advisable it also is to have the eyes examined in those cases which suggest albuminuria, but in which it is apparently absent. The most likely time in the twenty-four hours in which to find a urine albuminous is, I may say, in my belief, some three hours after the patient has risen from bed. From what has been said it is evident that in cases of apparently physiological albuminuria it is well to consider even in young people the possibility of the presence of contracting granular kidney. The importance of considering these cases of so-called physiological albuminuria is emphasized by the fact that Eales, who examined the eyes of 14 such cases, young men between 11 and 28, found typical retinal changes in five of them, a sufficiently startling statement. An important question is, "What forms of albuminuria may be accompanied or followed by albuminuric retinitis?" Cases have been reported as dependent upon even amyloid degeneration of the kidney, though these are certainly an exceedingly rare accompaniment of a rare disease, and probably occur only when amyloid degeneration complicates a previously existing granular condition. It is found with the albuminuria of pregnancy, and it is said to be occasionally seen along with the acute parenchymatous nephritis of infectious diseases, such as scarlet fever, as well as the more chronic "large white kidney," but as albuminuric retinitis is certainly peculiarly related to granular renal diseases we must remember that granular kidney may have existed before the acute attack.

The ocular condition may go long undetected, for subjective *symptoms* may, and generally do, remain absent until the case is very far advanced indeed. So long as the macula escapes and the disordered areas are individually of small extent the eye may be yet very seriously diseased before the vision is notably affected. The state of the eye is not infrequently quite unexpectedly discovered, which is often the patient's as well as the physician's first indication of any serious trouble. When vision does become affected it often rapidly goes down hill, though it seldom entirely disappears. The affection is generally binocular, though a number of monocular cases have been reported. I have myself seen only one such. This is mainly a disease of late middle life, but cases are found in youth, even in childhood. These latter seem rather to indicate a dependence upon congenital syphilis. It is not really known in what proportion of cases of granular kidney albuminuria develops, though various statements have been made. The ophthalmoscopic picture of typical retinitis albuminurica ought to be of interest to all practitioners of medicine, because it reveals to the eye in the living body pathological changes which may be more marked in the retina than in other tissues, its vascular supply being terminal, without anastomoses, but is illustrative of lesions present in other and more vital organs, such as brain and kidney. These visible ocular changes have been best described by Marcus Gunn, but I shall place them under five heads. One or other of them usually predominates, though they may all be present at the same time. They are: (1) vascular changes, (2) hemorrhages, (3) white spots, (4) exudations, (5) neuritis.

(1) The pathological condition, which, if not always noticeable, yet probably underlies all the others, is the change in the vessels. This change is made up of an apparent narrowing in the size of the arteries compared to the veins, the broadening of their light streak, their tortu-

osity, the disappearance of such part of a vein crossing beneath an artery as is covered by the walls of that artery, which, though another explanation has been given, seems to show that these walls are opaque, as does their visibility when lying beneath a vein; occasional local fusiform swellings on some of the smaller arteries, and distension of veins with loss of central light streak from compression by thickened arteries crossing them.

The morbid anatomy to which these changes are due consists in a thickening and degeneration of the walls of the arteries in each of their coats, but especially the intima, frequently hyaline in appearance, but not giving the chemical reaction of amyloid degeneration, and sometimes so marked as to produce total obliteration of the lumen on the one hand, and permit of aneurmismal dilatation on the other. Even the capillaries may be so much affected as to remain open on division. These appearances are not confined to the retina, but are found in all the vascular parts of the eye. In the rare cases originating with acute infectious diseases, of which I personally cannot recall an example, it may be that the renal and ocular lesions are synchronous in their beginning, but it is most probable that in cases of granular kidney the renal pathology precedes that of the eye, and that the latter results from abnormal and irritating constituents of the blood in spite of those cases in which the ocular affection has been observed before albuminuria was discovered.

(2) Hemorrhages, as might be expected from such vessels, are frequent. They are generally minute, but may be so large as to fill the vitreous chamber. Occasionally hemorrhagic glaucoma follows in their wake. It is not unlikely that in some cases thrombosis is present. The bleeding is most frequently from veins or capillaries, but may also come from arteries, and may be in any part of the fundus. It is more frequently toward the vitreous aspect of the retina in the nerve-fiber layer, whose anatomical arrangement then gives it a flame-shaped appearance, than in the deeper layers in which it is more circular. Hemorrhages may gradually become absorbed.

(3) The white spots, though actually preceded by disease of the vessels, are yet very frequently the first visible lesion. They are usually quite small, are situated toward the vitreous aspect of the retina in the region of the macula, and very often between it and the disc. They very commonly form lines like the spokes of a wheel, radiating from the yellow spot. They are somewhat chalky in appearance, but may be bright and glistening. The spots, which, when brilliant, contain cholestrin, are produced by the fatty degeneration of nerve and fibrous tissue as well as of old exudations. The radiation round the macula has been said to result

from the degeneration of the fibers of Mueller, which there, instead of being vertical, run obliquely in the retinal tissue and thus present their length rather than merely their ends to view; but according to Marcus Gunn the lines arise from folding of the retina by œdema. The region of the macula contains neither arteries or veins, and this should be remembered when considering its special liability to degeneration. These spots are seldom, in cases of granular kidney, seen to disappear.

(4) The state of the vessels, along with the increased blood pressure incident to the renal affection, constitutes a condition of things in which exudations are a certainty. Œdema affects other tissues of the eye as well as the retina and replaces the normally distinct outlines of the fundus by a delicate grayish cloudiness. Lymph may exude in places and give rise to white spots, which may be confused with the spots of degeneration already described, but they are less defined in outline, may be raised above the normal level of the retina and are woolly in appearance. It is these white spots which are liable to change in position, to diminish in intensity, and even to disappear. Serous exudations behind the retina not infrequently separate it from the choroid. These detachments tend to be peripheral and symmetrical in both eyes. In cases due to pregnancy they sometimes disappear by reattachment on absorption of the exudation. Occasionally detachments are hemorrhagic in origin. The microscope shows the retinal tissues separated by spaces filled with fluid, while the rods and cones are apt to be swollen, though they may be normal.

(5) Swelling of the optic disc with blurring of its edges is common, and sometimes this may be excessive and bear a close resemblance to the "choked disc" of cerebral tumors, which resemblance may be intensified by the presence of vomiting and headache. The usual signs of secondary atrophy are liable to appear at a later date.

The *prognosis* in albuminuric retinitis depends upon the disease accompanying it. When due to removable causes, such as pregnancy, the ocular lesions may cease with their cause. It is in chronic renal disease, especially granular kidney, that albuminuric retinitis appears as one of the most certain indications that the final stages of the patient's life have arrived. Visión, indeed, may all through continue fairly good, though it is liable gradually or suddenly to become seriously involved or even lost, but it is as an indication of his approaching end that in these cases that albuminuric retinitis has its chief importance. If the patient lives for 24 months after its discovery he survives beyond the average time, for many die within a very few months. Cases have been recorded, however, of the prolongation of life to several, even to 12 years. This depends, of course, somewhat on the period of its discovery and upon the patient's circumstances. The wealthy classes, who can choose their environment, are known to live longer than the poor.

There is not time to consider the *diagnosis*, which, however, rarely presents difficulties. I *have* seen it hard to say whether the ocular appearances were due to renal mischief or to a cerebral tumor, and this has been the experience of others. Between albuminuric retinitis and that associated with diabetes the ophthalmoscope can really make no proper distinction. Diabetic cases are not infrequently also albuminuric, and it should be borne in mind that, though kidney changes are undoubtedly secondary and variable in kind and degree, they are always present. These consist of one or more of the following: Enlargement and fatty degeneration; contraction of the whole organ and thinning of its cortex; not uncommonly all the histological appearances of granular kidney; hyaline transformation of the epithelium of Henle's tubes; tubercle, lardaceous, disease, and even gangrene have been found.

The *treatment* is that for the disease preceding the ocular affection and, without going into particulars, may almost be summed up in the words purgation, diaphoresis, climate and hygiene.

While, in the short time properly allowed for these papers, we naturally, when dealing with the relation of albuminuria to eye diseases, consider first and chiefly albuminuric retinitis, it would be a great oversight to omit entirely those others which are equally closely related to it and are indeed dependent upon the same cause. I shall in closing say merely a few words concerning them. They may very well be divided into those which depend upon lesions of the visual apparatus: *first*, outside the brain (among which is of course albuminuric retinitis itself), and *second*, within the brain. Among the former œdema and hemorrhage in the lids and conjunctiva, hemorrhage into the optic nerve and into the orbit. Embolism or thrombosis of the central vessels of the retina is probably less uncommon than has been supposed. Iritis and cataract are probably little, if any, more common in albuminurics than in the general population.

Among intra-cranial lesions hemorrhage into the nuclei or trunks of the nerves supplying them has been said to produce temporary paralysis of some of the external muscles of the eye. Uræmic amblyopia is more frequently met with. It is probably the result of extreme cerebral anæmia due to vascular contraction caused by the irritation of poisonous matters in the circulation. The resulting blindness usually affects both eyes, and may be incomplete and transient, or absolute vision returning only after some hours' duration, though it may be delayed for three or four days. The pupils generally react to light, which indicates the cortical origin of the attack, but occasionally they do not, and then the nerve or optic ganglia are involved. In these latter cases the optic disc is likely to be found swollen. When recovery of vision does not fully take place there must be some organic lesion, and post-mortem examinations have shown that apparently functional cases have sometimes had their origin in small hemorrhages. It should also be noted that central amblyopia is not infrequently accompanied by other nerve symptoms, such as hemiplegia.

PENETRATION OF AN EYE WITH A RUSTY TWENTY-PENNY CUT SPIKE.*

BY WM. C. BANE, M.D.,
DENVER, COLO.

Illustrated.

A. F., male, age 6 years, was referred to me by Drs. Eckerson and Harvey, April 12, 1898, at 7:30 P. M. Two hours previously the child had been accidentally struck in the right eye with a rusty twenty-penny cut spike. The eyeball was collapsed. A Y-shaped wound had been made in the cornea, the forks of which extended to the margin in the upper quadrants and the stem downward 1 mm. into the sclera. The blood-stain

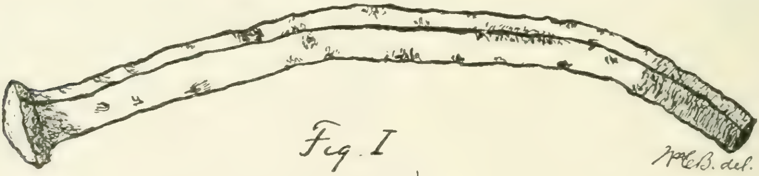

Fig. I

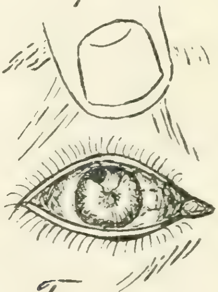

Fig. 2.

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*Case exhibited before the *Denver Ophthalmological Society*, April 21, 1899.

on the spike indicated that the point had entered the ball five-eighths of an inch. (See Fig. 1.) The eyeball was so completely collapsed that I was led to believe that as the nail dropped out, evidently by its own weight, that most of the contents of the globe had been lost. However the following morning the ball was quite full, with fair tension and the corneal wound gaping.

At the time of the accident and subsequently the child had very little pain in the eye. The corneal wound healed slowly, there being a little sloughing, but no active inflammation in the ball.

As the ciliary region was not involved enucleation was deferred. The ball shrank to three-fourths the normal size, and the cornea to five-eighths size. A coloboma exists in the upper outer quadrant of the iris, giving the impression that an iridectomy had been done, through which a faint red reflex is obtainable. Vision is nil. The ball is superior to an artificial eye. (See Fig. 2.)

BLINDNESS FROM DRINKING METHYL-ALCOHOL.*

BY H. GIFFORD, M.D.,
OMAHA, NEB.

That cases of this sort are rare can be judged from the fact that in the valuable monographs of Casey Wood (1) and de Schweinitz (2) the only one mentioned is that of Mengin (3). And so far as I know, no other case has been reported (4) until the present year, when the article of Kuhnt (5) appeared. Mengin's case had previously been reported by Viger (6), so that to the latter belongs the priority of establishing the deleterious influence of this substance upon the sight. Viger's patient was a convict of 31 years, who had drunk small amounts of methyl-alcohol off and on for three months without any decidedly unpleasant effects. The methyl-alcohol seems to have been obtained by precipitating the gums in varnish with water, the super-natent liquid containing the methyl-alcohol being used as a beverage. One day this man put two liters of water into a barrel containing a remnant of varnish, and the next day drank a half-liter of the liquid. An hour afterward he was taken with intense headache, vomiting, profuse sweating, dilatation of the pupils and delirium. The next day the delirium was gone, but he was completely blind, remaining so for a week, after which his sight slowly

*Read before the *Nebraska State Medical Society*, May 11, 1899.

returned, until, at the end of about six weeks, he could see to find his way about with the left eye, although with the right he could barely distinguish light. He then asked to be sent back to work, but ten days later he returned to the infirmary, saying that his sight was getting worse again, and this deterioration continued gradually until he became entirely and permanently blind. Viger apparently made no ophthalmoscopic examination, but when the patient was seen by Mengin two years later the latter found the optic discs of a dull, snowy white, the lamina cribrosa not visible and the vessels not markedly reduced in size.

Kuhnt's patient was a healthy man of 24 years. On the 23d of June he drank a mixture of methyl alcohol with ordinary rye-spirits (Kornbranntwein); the proportions were not known, and the man claimed to have taken only one good swig of the mixture. He felt no unusual effects from it until the afternoon of the next day, when he experienced nausea and giddiness and fell into a deep sleep, from which he awoke only for two short intervals, until the morning of the 27th; then on awakening he had severe pain in the head and found his sight much obscured. This obscuration increased, until on the 28th all perception of light was lost. He was seen by Kuhnt on July 1st, and a very slight pallor of the discs and reduction of the size of the arteries, with slight pain on extreme excursions of the eyeballs or on pressing the eyeballs back was noted. There was no light perception. The man was treated with pilocarpine, warm drinks and moderate doses of iodide of potassium. Perception of light began on July 3d and improved steadily until on July 25th V. was normal. The optic discs meanwhile had become milky white and the arteries plainly reduced in caliber, but this abnormality had nearly all disappeared when the patient was last seen on the 28th of July.

A comrade of this patient who had drunk a good deal more of the mixture was taken sick on the next day and died during the night without having been seen by a physician. The description of his symptoms indicated a severe gastro-enteritis.

Kuhnt has evidently overlooked the case of Viger and Mengin, for he refers to his own case as the first on record. He mentions the similarity of the symptoms displayed by these men to those obtained by Pohl with dogs, in which methyl-alcohol produces sleepiness, and in large and repeated doses fatal coma.

To the foregoing cases I can add the following: C. T., German, about 45 years old, on Dec. 5, 1898, drank about half a pint of a mixture containing about ⅔ water and ⅓ wood alcohol. The next day his head felt a little sore and confused, and he took another swallow of the same mixture.

On the 7th he felt the same as on the 6th until about 9 P. M., when he began to vomit and kept it up all night. During the night a terrific headache began, and the next morning everything looked foggy. The sight slowly got worse, and when he awoke on the morning of the 9th he could not see light. His physician informs me that his pupils were wide and did not respond to light, and that it pained him to move his eyes from side to side. I first saw him December 21st and found him to have no light perception, pupils wide and irresponsive to light, but responding slightly to the orbicularis test. The outer halves of the optic discs were decidedly atrophic and the disc margins were very slightly blurred, eyes otherwise normal. He was at once put upon pilocarpine sweats and large doses of iodide of potassium. After about ten days his sight began to return gradually, until, after ten days more, he could count fingers at several feet with each eye and could find his way about readily. The outer limits of the field at this time were normal for white, but he had an absolute central scotoma. This improvement, however, was destined to be of short duration. After remaining stationary for about a week the sight gradually decreased until, when he was last seen, on Jan. 20, 1899, it was reduced to hand movement at 1½ feet in the right eye and 4 to 5 feet in the left. Meanwhile the atrophy of the nerves involved the whole disc and the vessels had become decidedly small. Since then I have heard that he is entirely blind. This man took his methyl-alcohol on an empty stomach, while a comrade, who had had his dinner, drank of the same mixture (probably about the same amount) without any ill effects. This methyl-alcohol was sold by an enterprising young physician as ordinary alcohol. Another young man whom my patient knew patronized the same doctor, drank his alcohol on a Thursday night and died Saturday morning at 1, after having become entirely blind and then unconscious, during the preceding afternoon. Beside this a woman whom my patient knew obtained some alcohol at the same town and presumably at the same place, and, after drinking some of it, became unconscious and died the next day. The doctor is still at large, though not in that vicinity.

Through the kindness of Dr. E. L. Foster, of Hooper, Colo., I can add the following: Two brothers purchased a beer bottle full of "Columbian Spirits," or purified wood alcohol; the beer bottle probably held about a pint. This they poured into a half-gallon jug and filled it up with water. One of them drank freely of this mixture, the other only about three ounces. They then turned the jug over to their friends, and, in all, eight persons drank from it. The man who drank so much died within twenty-four hours. The other brother had very severe headache, pain in the stomach, incessant vomiting, great mental excitement, but no trouble with his eyes. Another man became wildly excited, pulse and respiration very rapid, temperature normal; he was found totally blind, with reactionless pupils, twenty-four hours after he drank the alcohol, and died two hours later. This man and the other man who died did not vomit at any time. The other men had only taken about a swallow each and were affected with severe headache, vomiting and pain in the stomach, but recovered after several days. In reply to a letter which Dr. Foster wrote to the Manhattan Spirit Co., which manufactures the methyl-alcohol used by these miners, it is stated that this substance has caused death in a number of cases, and that they always put upon their packages "For external use only." But in spite of this being done in the case of the miners, and also the fact that they were warned distinctly not to drink the wood spirit, they could not resist the temptation to use it as a beverage. This makes it evident to me that hereafter methyl-alcohol should always be labeled "Poison."

From the symptoms in Kuhnt's case and in my own it is altogether probable that wood alcohol causes a retro-bulbar optic neuritis from which, if the dose taken be not too large, recovery may take place; but from the outcome in Viger's case and in my own, one should be careful not to give too much encouragement on account of the improvement which sometimes begins within a few weeks after the poisoning has occurred. That this improvement was permament in Kuhnt's case was probably due not to the treatment used, but to the small amount of methyl-alcohol which the man drank. Kuhnt's treatment was eminently rational, but practically the same plan pursued in my case was followed by only temporary results.

Since this paper was read I have read the paper of McCoy and Michael (7), also that of Dr. Moulton (8) in the July number of the OPHTHALMIC RECORD. McCoy's and Michael's patient was a young man who became totally blind after drinking 120 c. c. of wood alcohol. The ophthalmoscope at that time showed optic neuritis, which passed into marked atrophy. In this case there was the same delusive improvement in vision as in my case and Viger's. The man became able at times to recognize people at some distance, but the sight at last accounts was reduced to light perception in one eye and fingers at six inches in the other.

Moulton's was very similar to the preceding one—total blindness twenty-four hours after drinking wood alcohol, with subsequent improvement to light perception in one eye and fingers at one foot in the other.

He was not seen by Moulton for some months after the poisoning, the ophthalmoscope at that time showing apparently simple nerve atrophy. Holden (9) mentions McCoy's and Michael's case and one other reported by Callan at the *New York Academy of Medicine*, and in describing the result of an experimental poisoning of a dog by himself says: "There were post-mortem changes in the rods and cones; the bipolar cells of the inner nuclear layer appeared normal. The nerve fiber and ganglion cell layers were slightly œdematous, but no hemorrhages were found. Many of the ganglion cells were in a state of degeneration. In the optic nerves, stained by Marchis' method, the medullary sheaths of some of the fibers were broken down." From this, Holden concludes that it is evident that the amblyopia (from methyl-alcohol) is the result of nutritive disturbances in the retinal ganglion cells, a conclusion which seems to me decidedly hasty. Aside from the fact that in the single experiment upon which it is based there certainly was a possibility of post-mortem changes in the ganglion cells, the clinical evidence is decidedly opposed to such a conclusion. The orbital pain noted in the case of my patient and that of Kuhnt, the positive neuritis observed by McCoy and Michael, and the complete blindness followed by marked but mostly temporary improvement, all indicate a primary affection of the optic nerve, though it may well be that the ganglion cells also suffer primarily.

1. Casey Wood, *The Toxic Amblyopias*, *Annals of Ophthal. and Otol.*, 1892-94.
2. De Schweinitz, *The Toxic Amblyopias*, Philadelphia, 1896.
3. Mengin, *Rec d'Ophtal*, 1879, p. 663.
4. This bibliography is defective; see appendix.
5. Kuhnt, *Zeitschrift f. Angenheilkunde*, 1899, 1.
6. Viger, *L'Annee Medicale*, June, 1877, p. 100.
7. McCoy and Michael, *Medical Record*, May 28, 1898.
8. Moulton, *Ophthalmic Record*, July, 1899.
9. Holden, *Archives of Ophthalmology*, March, 1899.

A CONVENIENT APPARATUS FOR TESTING THE COLOR SENSE.

BY S. MITCHELL, M.D.,

HORNELLSVILLE, N. Y.

Oculist and Aurist to St. James' Mercy Hospital. Oculist to Erie Railway.

Illustrated.

For some time I have been desirous of procuring some practical appliance for office use in testing the color sense, other than the Holmgren test. I have made use of a light and colored glasses for some time, but could not find in the market any apparatus whereby colored glasses could be conveniently used for this purpose.

For the one that is here described I claim nothing original, as I am wholly indebted to Dr. C. H. Williams, of Boston, for the ideas used in the construction of the essential parts.

The lantern which he exhibited before the section on ophthalmology at the last meeting of the *American Medical Association*, after reading his excellent paper on "The Examination of the Visual and Color Sense of Railway Employees," has been taken as a model.

As I journeyed homeward from Columbus I busied myself with making a sketch of a lantern, in which I did not strive to improve on the doctor's lantern, but only sought to simplify and bring into a more compact form the essential parts of his lantern.

Having decided to employ a 10-candle power incandescent lamp with a frosted globe for the illuminant, and to make the lantern a permanent fixture in my office, it was comparatively an easy matter to secure both simplicity and compactness in its construction.

The photograph presented herewith, shows the lantern *in situ* in my refraction room. The box for the lamp is made of ⅜-inch maple wood and is 3 inches square by 4 inches high, and painted a dead black inside and out. It was left open at the back, as the wall to which it is secured is also painted a dead black to form a suitable background for test cards. The top is movable and has an aperture in the center, through which the small end of the lamp globe is thrust and then screwed into its socket. Hence when the lamp is dropped into position, the box is tightly closed and light is emitted only from an aperture ¾ of an inch in diameter, made in the front and near the top of the box.

There are two brass disks, one 5 inches in diameter, and pierced with 9 apertures ¾ of an inch in diameter, each filled with a colored glass. There being three shades of green, three of red, and one each of rose, yellow and blue. To facilitate the turning of it, this disk has a milled edge.

The other disk is smaller by ¼-inch than the one just described, and is turned by means of a small knob in the center. This disk has 6 apertures, ranging in size from ¼ to ¾ of an inch in diameter. It is placed over the larger disk when they are both in position on the box, and both turn on the same pivot. This pivot is so placed on the front of the box that by turning either disk, the center of any aperture may be made to correspond to the center of the aperture in the box, where light is emitted.

By means of a catch attached to the box, and a shallow notch, opposite each aperture in the disks, the disks may be revolved separately and made to stop at any desired point.

Aside from the utility of this appliance as an auxiliary in testing the

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color sense, which is not the purpose of this paper to discuss at all, I have found it very convenient to use the luminous spot where the colors are displayed, when using the phorometer or the Maddox rod. So the time-honored candle in my office has been relegated to the dark room, where it still performs faithful service in determining light perception and light projection of cataractous eyes.

The work of constructing this apparatus was all done from my sketch, by a mechanic in this city, with the exception of blackening the brass disks and fitting and setting the colored glasses, which work was done by E. B. Meyrowitz, the well-known instrument maker of New York City.

CAPSULAR CATARACTS.

H. BECKLES CHANDLER, M.D.,
Surgeon Massachusetts Charitable Eye and Ear Infirmary, Boston.

Illustrated.

During the past year the operation for secondary or capsular cataract has been more or less discussed; this discussion has revealed the fact that while some feel that the operation is followed by no ill results, others abstain from operating unless absolutely necessary.

I cannot find, from a casual perusal of the modern text-book of ophthalmology, or of the discussions, any definite statement of its technique; I think this is most important, there is no difficulty in punching a hole through the capsule, but how to do it with the least possible injury is the question, and my design in writing this article is, by defining the technique and stating the results that follow my operations, and by arousing criticism or discussion, to derive benefit from the experience of others in the minor details of their operations and their results.

Some years ago it was my habit to use two hooks and tear the capsule, or a single hook with a stop-needle (Agnew's); these operations were often followed by severe reaction, iritis, a mild form of cyclitis or hyalitis; when we consider that the vitreous is an organized body we realize that this tearing, by a hook, produces a laceration instead of an incision, and, not only is the aqueous lost in every case, but the vitreous enters the anterior chamber and we are fortunate if, on withdrawing the hook, a thread of vitreous does not adhere to it. Feeling that this was an injury to the eye, I abandoned this practice, resorted to the use of a narrow Graefe knife, and, although excellent as a cutting instrument, the corneal wound was dependent on the thickness of the capsule and amount of manipulation required, and the aqueous was also lost in every instance.

The knife-needle, with the excellence of modern manufacture, leaves little to be desired except in tough capsules, where, I believe in some cases no knife will either cut or even enter the capsule, and, for these, Wecker's scissors are preferable, although a clumsy instrument, requiring a large corneal incision; the more delicate scissors that have been devised I have found inclined to spring without cutting; the punching instruments that I have seen and tried need no comment, as I have found nothing of sufficient delicacy to warrant advocating its use.

During the past ten or twelve years I have operated on a great number of capsules, performing the secondary operation, where the patient lived at a distance, eight or ten days after the primary, when the eye warrants the operation; in no instance have I met with any reaction of sufficient severity to cause me any anxiety, in fact, in a large percentage, there is absolutely no injection eight hours after the incision.

In my opinion the most important points in the operation are perfect illumination, position of corneal puncture, and knowledge of the condition of the capsule and a sharp knife.

It is impossible to use diffused light with any satisfaction, except in cases of a densely opaque capsule; the focalizing of light, by an assistant, is annoying, the trembling of the hand holding the lens disturbs the clearness of vision.

I have therefore devised an electric light whose focal distance can be regulated; attached to my light I can use either a pair of fixation forceps or a knife-needle; I have then perfect illumination controlled by myself, and it makes very little difference whether the eye is moved or not, as my knife is always in the focus of the rays of light.

This instrument I have found invaluable and of the greatest assistance in all cases, more especially the wrinkled transparent capsules.

The knife should always be entered at the sclero-corneal junction and farthest away from the intended puncture through the capsule.

By puncturing the cornea at the junction we obtain the greatest sweep possible for the knife, and there is less likelihood that a vitreous bead will follow the removal of the blade.

If there is any synechia present and the appearance of the capsule warrants a puncture at that point, I prefer to make it there, as I get the additional support of the dilating iris.

A straight incision of sufficient length in an elastic capsule I have always found sufficient.

Knapp's axiom "Cut but do not tear" is sound in cases where it can be followed; in a case where a knife refuses to cut, the capsule may tear, at some weak point, in spite of our utmost care.

No one can state definitely the best time to operate; the appearance of the eye, the reaction which has followed our primary operation will, to a certain extent, govern our decision, but the sooner the operation is performed, the more elastic will be the capsule and the less the difficulty in cutting.

In regard to the selection of a knife, I personally have preferred a sickle-shaped blade of a medium size, and always remove the temper from the shank of my knife so that I can bend it in any position I wish; this is particularly advantageous in cases where we desire to puncture the cornea from the nasal side, as any desired angle can be given the blade.

I have never succeeded in obtaining a knife-needle whose edge is perfectly satisfactory; the points are usually excellent; one has to search diligently through a number to find one that is sufficiently sharp; the steel, however, is soft and can be easily stropped and the edge made equal to a sharp Graefe knife.

STRABISMUS, OR SQUINT. A THEORY AND TREATMENT.*

BY FRANCIS VALK, M.D.

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The extremely interesting paper on "The Etiology and Educative Treatment of Convergent Strabismus," by Priestly Smith, M.R., C.S., reviewed in the OPHTHALMIC RECORD from the *British Medical Journal*, July 2, 1898, points to the innervation theory of squint for its etiology, as he states that "convergent strabismus is a disorder of innervation in which the visual centers fail to control the act of convergence," and also dwells on the old theory of relative hypermetropia with its influence on accommodation and convergence, thus placing all cases in the same category.

Donder's antithesis, on page 415, is as follows: "Hypermetropia causes accommodative asthenopia, to be actively overcome by strabismus convergens. Myopia, to muscular asthenopia, passively yielding to strabismus divergens." A very beautiful theory, which has found so many admirers and diciples, but how many cases do we meet that completely refute and demolish his propositions?

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*Read before the *Ophthalmic Section of the New York Academy of Medicine*, May 15, 1899.

Hansen Grut advances the innervation theory for his cases of convergent squint, the position of rest for his divergent cases, and suggests that after death, or in ether narcosis, the eyes diverge; but in reference to this Schweigger says that he knows that neither "death nor narcosis is the natural condition of man."

Walfors states: "In my opinion squint depends upon an antecedent anomaly of the muscles, in which, under the influence of several accompanying factors, among which innervation plays an important part, carries the eye into a squinting position." I regret that I am not fully acquainted with Walfors' theory in full, but it seems to me that the first part of his proposition may lead us to the true theory.

Schweigger's articles do not seem to advance any particular theory, unless it is that of Donders, but refers to all in a general way, while Landolt also seems to hold to the antithesis of Donders.

All these writers have advanced their ideas on the subject of the causes of squint, in which one writer will directly oppose the theory of the other, so that when one reads the diverse opinions of such eminent men in the profession of ophthalmology he feels somewhat at a loss to understand what are the causes of squint.

Every physician must form his own opinion of the existing condition of the human body, either pathological or functional from his individual experience in the results of his cases, and to formulate a theory must take many years of constant observation, with a large number of illustrative cases. Hence any theory must be so advanced that it may meet the indications of all cases, even though we may grant the proposition that the "exception proves the rule."

For several years I have watched and studied in all their varying conditions my cases of strabismus, and I have felt that in all I could see and note a cause and effect based on the proposition which I have stated in a previous paper and further improved from subsequent observations, as follows: That the eyes move under the innervation derived from two centers of the brain: first, in the field of fixation, in which all the straight muscles of the eye are capable of receiving nearly the same amount of innervation, and consequently, under the stimulation of the will power, turns the eye equally, or nearly so, in all parts of the field of fixation; second, that the eyes move in the field of fusion, in which they do not move under the direct control of the will power, but about a common point, in certain directions, under the stimulation of a center that is not influenced by the action of the will, called "unconscious innervation," and this center receives its stimulation from the desire for fusion of the images on the retina. These movements seem to be controlled by the relative power of the straight muscles, as shown by their size and points of insertion into the sclera.

Granting the above conditions as existing and controlling the movements of the eyes and the direction of the visual lines, we may construct a theory that will elucidate and explain the causes of all conditions of strabismus.

Hansell, of Philadelphia, says: "It is unscientific to attempt to separate the muscular from the innervational apparatus, the more so as the latter comprises both the fusion force and the impulse conveyed by the nerve trunks; and equally futile is it to speak of one muscle as having more power, as measured by prisms, than its corresponding muscle in the other eye." Having read this I turn to Stevens and find: "All these determinations having been made with sufficient care (that is, the equilibrium test, etc.), the examiner proceeds to ascertain the relative power of the different pairs of muscles by finding the strongest prism with which images can be united in different directions." If, then, the prism test is unscientific and useless why use it at all? In my opinion I consider it the only reliable test for the relative power and the indications of a muscular anomaly.

The conditions for this theory depend upon the muscular conditions of the eyes, as shown by prisms, when associated with certain other conditions in the eyes themselves; in other words, the position of the visual lines depend upon the fusion power, or guiding sensation of the eyes and the relative power of the straight muscles.

If we study the theories and the propositions as advanced for the causation of squint, then all the cases must be placed under one head or class, dividing them simply according to degree, as latent, periodic and fixed: and though the majority of writers apply the same theories to all alike, yet to my mind, and because of my experience, there seems to be two distinct classes, with their respective conditions, that cause the squint. Into these two classes we may divide all our cases of squint and then proceed to develop a theory that will cover both classes, in which the relative power of the straight muscles of the eye must and do play the most important part.

Then, as I have always claimed (and I am glad to see that other writers are now alluding to it), we must take into consideration the guiding sensation of the eyes, this essential fusion power, if we would find a reasonable cause for squint and its dependence on the relative power of the muscles.

Before proceeding further with the argument let me, in a few words, give you the conditions of two cases of squint found in two girls of the same family.

Rebecca L., age 14, convergent concomitant squint, fixed in the left eye, onset, when one year old. R.E.V.=$\frac{20}{20}$, L.E.V.=$\frac{20}{200}$, Ah.=1. D. ax. 90° in each eye. Ophthalmoscope and retinoscope show the same refractive condition. Operation, tenotomy on the left internus, when 7 years old, or 7 years ago. To-day there is no evidence of the squint, the cosmetic effect is very good, the visual axes seem parallel and she seems to fix with both eyes at the near point and yet the visual power is the same as at first.

Edith L., age 11, convergent concomitant squint, nearly always fixed in the right eye, onset, when 6 years old, V.=$\frac{20}{20}$, in each eye, Hm. 1.50 D in each eye. No astigmatism, ophthalmoscope and retinoscope show about 5 D. of hyperopia. Has homonymous diplopia of 30°. Glasses were ordered for this case, with complete disappearance of the squint.

In passing I would also call your attention to a case of divergent squint that I operated on a very short time ago, when on the exposure of the tendon of the internus it was found to be very small, not more than ⅛ of an inch broad; while the externus of the same eye was found to be more than ¼ of an inch broad. This, you will admit, is pretty strong evidence of the muscular action on the cause of squint.

Now it seems to me very strange, when we compare the clinical history and the results of treatment of these two cases, how any one can consider them both under one class and hold that any one theory will cover both cases. There must be some different cause acting in each case to produce the squint. Will the innervation theory or the antithesis of Donders' include both of these cases?

Therefore, I believe that in the proper study of the causes of squint, we must first divide them into two great classes, as illustrated in the two cases given above. Perhaps we may not be able to "draw the line" very perfectly between these two classes in all the cases of strabismus, but at all events near enough for all practical purposes, and as I have watched and studied my own cases I feel almost positive that we can do so, while I have verified my conclusions over and over again in my clinical work.

In May, 1894, I read a paper on Strabismus before the *Medical Society of the County of New York*, in which I made the proposition to separate the cases into these two classes, and since then I have convinced myself of the correctness of my proposition, but, at the same time, to-day I would still further advance my ideas on the muscular theory, and in the second class of cases I would also place the balance of power in the ocular muscles as the true and primal cause of all these cases of strabismus.

After a careful study of all my cases and trying to ascertain the true cause of squint, I would state that it depends almost entirely on the balance of power of the straight muscles of the eye; not as Walfors would have us believe partly on an antecedent anomaly of the muscles, but simply on their balance of power and that innervation, or the position of rest, has nothing to do with it. If I am not mistaken this can be proved in all cases.

Now this balance of power in the action of the straight muscles of the eye, or as Duane has so well classed it, the power of *duction* as shown by the prism test, has been proved long ago by many observers and their tests. I would particularly refer to the tests made by my friend, Dr. J. M. Banister, Surgeon U. S. A., in his very careful examination of 100 soldiers, who never had any asthenopic symptoms whatever and with vision $\frac{20}{20}$, or better.

This balance of power of these muscles in their relation to each other, as shown by the fusion power or guiding sensation, will even during sleep determine the position of the visual axes.

Placing then the muscular balance as the chief cause of squint, we also find other minor causes that will influence the position of the visual axes. First, congenital amblyopia in one eye, and secondly, an antecedent anomaly of the muscles associated with relative hyperopia, as suggested by the first part of Donders' antithesis, or any refractive condition from that of emmetropia to the most complicated astigmatism.

I have now the notes of 130 cases of squint, collected from my private and clinical practice, of which I note three cases of partial paralysis of the muscles that may be excluded from this theory, leaving 127 cases to be divided as follows: Divergent, 14; convergent, 113. These again I would divide, and I think the difference is clearly shown: Divergent, first class, 7; second class, 7; and convergent, first class, 44, and second class, 66, with three cases unclassified, as they were too young to test the visual acuity.

I will now call your attention to what I consider determines these two classes, why they should be thus separated and the causes therein acting to produce the squint. In these two classes I feel positive we may place all our cases of squint, either divergent, convergent or those of the vertical deviation, and I hope to show you some material advantage in so separating the cases into two classes.

In those of the first class we find this condition: Amblyopia, always congenital, the primal and sole cause, vision less than $\frac{20}{100}$, associated with a normal balance of power in the lateral moving muscles. Hence, with the loss of the fusion power or the guiding sensation, the eye quickly turns in the direction of the most powerful acting muscle, namely, the internus, in convergent squint; and the externus; in divergent squint, etc. This is well illustrated by the early onset of the squint, in cases of this class, and it is very beautifully proved by the cases of amblyopia of the same kind, that do not squint and will always show the same power in abduction as in adduction.

In the second class of cases we find this condition: Some refractive error, either hyperopia or .myopia, with or without an astigmatism and with this an "antecedent anomaly of the muscles" or, in other words, a weakness of some one of the straight muscles of the eyes acting either laterally or vertically. In convergent squint there is a deficiency in the power of the externi, and in divergent squint there is a deficiency in the power of the interni, while the same rule will apply to all squints in the vertical direction. (Are not these cases very difficult to prove by any other theory?) In this class of cases, if the squint has existed for any length of time, we may have what is called "amblyopia ex anopsia," arising simply from non-use and the suppression of the image in the squinting eye. I think that it is in these latter cases that we have the reports of the restoration of the vision after an operation or the sudden loss of the fixing eye. The theory as applied to this class is beautifully illustrated in those rare cases of convergent squint, with myopia; a condition that I do not think can be explained in any other way.

The fact that all these refractive conditions may exist without squint has been the hard question to answer, or rather I have not been satisfied with the explanations that have been offered so far as I have been able to consult the writers on this subject. Yet it is from this fact, associated with an imbalance of the ocular muscles, that I have come to all my conclusions and I have yet to see and study the cases that cannot be clearly placed in one of the two aforesaid classes.

Fuchs, in the last edition of his text-book, gives the etiology of strabismus as follows: "Strabismus is, therefore, the result of the combined action of two factors, diminution in the visual power of one of the eyes and a pre-existing disturbance of the muscular equilibrium, according as the latter factor consists in a preponderance of the external or internal ocular muscles, a convergent or divergent squint is produced," and considers all cases of divergent squint as being myopic.

The same ideas have been advanced by Stilling and also by Swan Burnett, but I do not think that they cover all cases, as so many have no diminution of the visual power, while others have no disturbance of the muscular equilibrium according to Nature's standard. It is utterly impossible to place them all under one general head, therefore, we must separate them into two classes and then our theory will cover them all; for in the first class we have no muscular anomaly, but a normal balance; and in the second class, a muscular anomaly with or without a refractive error.

Let me now take up the argument in reference to the first class, which I will illustrate with a typical case: A child, born of perfectly healthy parents, is normal in all respects, the visual axes perfectly parallel, and the power of the external muscles of the eyes properly balanced. Now, one eye is amblyopic, in which there is no fusion power, complete absence of the guiding sensation in that eye, hence there is no tendency to fix the visual line (and I believe this power comes very early in life), then with these conditions, it therefore seems very reasonable to me, that the eye would turn in the direction of the most powerful muscles. In convergent squint the eye turns inward and remains so, as there is no stimulation to make it resume its normal position. The same argument may apply to divergent squint under the same conditions.

Before proceeding further we must understand what this condition of amblyopia is; objectively we can find no evidence of a want of vision, for the examination with the ophthalmoscope gives us the same picture as is shown in the other eye, and as Maddox says the macula appears "tantalisingly perfect," but subjectively there is all the evidence of the want of vision. These amblyopic eyes will not have a restoration of the vision under other conditions, no matter what may be the testimony to that effect by other writers. I make this statement because I have failed to ever meet a case, because a careful study of the various reports show some flaws in the estimation of the visual power and because other observers, just as careful and experienced, have made the same statement. Hence does not our clinical experience teach us that we do have a congenital amblyopia, not a suppression of the retinal images? For just as soon as we can possibly test the vision of a child who squints, say at 5 years of age, we find it less than $\frac{20}{100}$, and waiting five years longer it is still the same. Can any one claim that there has been a loss of the physiological sensibility of the retina to reduce the vision from normal to less than $\frac{20}{100}$, in the first five years of life, and yet after that, or in the next five years, with the squint remaining, there has been no further loss of retinal sensibility, and the vision remains the same. I would also refer you to those cases where we have an amblyopia of the same kind, in which there never has been any tendency to squint, and yet the vision remains the same through life, while they seem to have binocular fixation. I therefore cannot understand the claim that this condition is amblyopia ex anopsia.

Furthermore, in the same cases the squint is never corrected; it may remain until they are about 30 years of age, and then the convergence disappears, the visual axes are parallel and remain so, and yet we find the vision about the same as stated above.

May we not forcibly ask: "Does all the loss of vision take place in the first five years of life and then remain so?" To me an answer is hardly required to such a self-evident fact.

Moreover, examine those cases of monocular amblyopia who never had any deviation of the visual lines and invariably you will find that the normal balance of power does not exist—that adduction is the same as abduction, that version of the eyes is normal; there is no preponderance of power in either of the lateral muscles, and that the amblyopic eye simply follows its fellow in the associated movements.

To repeat, what, then, are the conditions of our first class of cases? First, congenital amblyopia, associated with a normal balance in adduction and abduction, then, taking from the eye its power of fusion or the guiding sensation, the eye must turn in the direction of the most powerful muscles—namely, inward or outward, up or down, as the case may be—the same conditions acting on the other eye under the screen test, for the visual lines maintain their respective distances, showing that the squint is concomitant.

This is not a preëxisting disturbance of the muscular equilibrium (Fuchs), nor is it due to the eye assuming a position of rest, but simply to the normal power of adduction over that of abduction, when the retina is deprived of its guiding sensation by the amblyopia. The above argument will also apply to divergent squint, or the vertical variety, but in these cases we have a muscular anomaly acting in the same way.

I now pass to the argument for the second class of cases, but in this I wish to change, or rather to extend, my views as published in my last paper on squint, mentioned before in this paper.

In this class a child is born with perfectly normal vision in each eye; there is generally an error of refraction, either with or without astigmatism, and there is always an imbalance of the ocular muscles.

Now, we notice as the child begins to play with small toys or to use the eyes at the near point it begins to turn one eye inward at times, called periodic squint. This condition may continue until the child is 5 years old, when one eye constantly turns inward, called fixed squint. Does hyperopia cause this, when we see so many hyperopes that have no tendency to squint? May we not reasonably attribute it to an insufficiency of the externi? I think that this imbalance of the ocular muscles will also explain the reasons for squint in the cases of emmetropia, myopia or astigmatism without hyperopia.

Now, strabismus is generally convergent, and why? We know that the centers for convergence and accommodation are very closely associated in the oculo-motor tract beneath the aqueduct of Sylvius and the floor of the fourth ventricle, and as the child begins to use the eyes, if it is hyperopic, it requires a greater power of accommodation. The stimulation for this condition is conveyed to the cerebral centers and so stimulating the power of convergence; then with the existing want of power in the externi we have the convergence of the visual lines.

Assuming this to be the condition, what becomes of the image formed on the retina of the squinting eye? First, the image of the object falls upon the least sensitive parts of the retina—namely, the inner peripheral part—there forming an indistinct image; secondly, the image, whatever it may be, that is formed at the macula, or most sensitive part of the retina, is not in focus, the rays coming from a far different plane than the object, and again we have an indistinct image. Consequently the visual centers will readily suppress these indistinct images formed on the retina, and only single vision results. We can now say there is a loss of vision from "physiological sensibility through psychical exclusion in the squinting eye, but we must remember that the sensitive retinal elements are still the same and may be developed to their former power when the eye is used under proper conditions. The vision is naturally reduced in one eye from disuse, the so-called amblyopia ex anopsia, and may be improved by an operation, by glasses, or the exclusion of the other eye.

Strabismus has been divided into latent, alternating, and fixed, each and severally, one of degree, and if so do they not all depend upon the relative power of the straight muscles of the eyes? It has been stated that I "fall into error when I speak of the strength of the straight muscles estimated in this manner," referring to the test with prisms, and that "his argument seems illogical," but if I am in "error" or "illogical" I shall be glad to be convinced of my fault, for I have studied the cases of squint coming under my observation time and time again, both in my private and hospital practice, and have read all the literature that I can find on this subject, yet I have only been more and more convinced that this theory of the action and the relative power of the ocular muscles is the chief and determining cause of all cases of strabismus. I have yet to meet with a case that cannot be explained in one of these classes, and in which I can readily demonstrate the influence of the ocular muscles in the production of the squint.

Moreover, on the other hand, we meet so many cases with all the other essential conditions that we find in squint, and yet there is no deviation of the visual lines. Take, for instance, those cases of amblyopia congenitalis in one eye, perhaps hyperopic or astigmatic; no asthenopia; intelligent, bright people, between 15 and 30 years of age; they have perfect binocular fixation, but no binocular vision or sense of the "third dimension," but they have never had the slightest tendency to squint; yet the amblyopic eye follows the other in all parts of the field of fixation. I have tested these cases over and over again, and have invariably found exophoria, or in other words, by the test in which I am said to be in error, the relative power of the externi was the same, if not slightly greater, than that of the interni. Abduction was the same as adduction, and with the absence of the fusion power there was no tendency to turn the amblyopic eye inward.

Furthermore, I have never seen an explanation of the cause of squint in myopia when it is convergent. Surely the "position of rest" cannot cause it, nor the last clause of Donder's antithesis, but, on the other hand, a decided weakness of the externi may readily cause the eye to turn in under the stimulation for fixation at the near point.

Again, if the innervation, the position of rest, the hyperopia or any other of the advanced theories is the cause of the strabismus, then why do we operate on the muscles by tenotomy or advancements that simply and solely alter the relative power of the straight muscles of the eyes? And does not this muscular theory apply to the action of the muscles in the verticle meridian, in which we have an upward or downward strabismus?

Maddox says "non-paralytic squint, therefore concomitant, is purely due to excessive activity of the converging innervation," but I do not think his arguments prove it, as squint does not always disappear under the influence of an anæsthetic and "innervational habit" has nothing to do with physiological conditions.

I would also refer to the "natural cure of squint," in which you will have the history of convergence of one of the eyes for several years, until they have become about 30 years old, when the squint disappears and they have perfect binocular fixation. This, as far as my observation goes, always occurs in the squint of the first class, or those with congenital amblyopia. Now examine these cases and you will find the amblyopia the same in reference to the vision, but if you carefully test the relative power of the lateral moving muscles by the prism test you will have abduction the same as adduction. Now what has become of the "innervation" or the "habit"? Has not the contracted internus lost its power after all these years and the eye finds its natural position and follows the other?

I do not wish to take up your time with illustrative cases nor with any further arguments in favor of this muscular theory, but I shall be pleased to see the case of squint of any kind that cannot be explained under the head of one of the two classes, always excepting any case of paretic squint.

Finally, with these conclusions in reference to the theory of strabismus and granting that they are correct, then the management of all our cases is clearly indicated, having determined the class to which the case may belong. It only requires the intelligent application of the treatment to finally end in success.

Now what are the indications of the first class, or strabismus with congenital amblyopia? I do not believe that in any case we can restore in any way binocular vision, but our aim must simply be to equalize the muscular balance and so attain a perfect cosmetic effect in order that the eye may keep its natural position with reference to the fixing eye; that after an operation glasses may be ordered and used, if there are any indications for them, but that all attempts to restore the vision will be useless.

Our treatment then becomes simply one of an operation to improve the cosmetic appearance, and that by one operation only, as, *shortening of the weak muscle* and a complete tenotomy of the powerful one. If you will put a "tuck" in the weak muscle, externus or internus, as the case may be, with the catgut suture, as I have suggested in an earlier paper, then do a complete tenotomy on the opposing muscle and tie your suture so as to bring the eye into the primary position, you will have corrected an ocular defect with a single operation that will not tend to return. I have followed this procedure in my office and clinic for several years and have yet to record the first failure.

In this class and by this method we will not have to operate on the fixing eye—a great comfort to our patients—while the suture will be absorbed, so that we do not require a second operation for its removal.

These cases cannot be cured by the use of atropine and glasses, but must have an operation just as soon as the visual power can be tested, so that we may decide if one eye is amblyopic, and after that glasses if needed. Amblyopia is usually associated with hyperopia, but I do not think the refractive condition is a factor in the causation of this class of strabismus.

In the treatment and the technique of our second class of cases—and these are in the majority—we are now confronted with a far different problem, in which we must seek to restore binocular vision, perfect fixation and the ultimate restoration of the vision in an eye that has lost its power to see from disuse.

Now we have two conditions to consider—primarily, an imbalance of the ocular muscles, and secondarily, a refractive error. These two conditions must be worked out with all the objective and subjective tests at our command before we take into consideration any operative interference. Here we may have all kinds of refractive conditions and all the different degrees of squint not latent, but apparent, alternate, periodic or fixed, from that of the slightest diplopia to a fixed squint, in which there is monocular vision of the fixing eye and reduced vision, with perhaps an eccentric fixation area, in the other eye.

Hence the exact and correct estimation of the refraction, even under the full effects of a mydriatic, is the first essential, as, while I believe all these cases are associated with an imbalance of the ocular muscles, either those acting laterally or those acting vertically, yet the correction of the refractive error will in many cases so relieve the strain on the fixation power and restore the guiding sensation that the use of proper glasses will correct the tendency to a mal-position of the visual lines, and the squint disappears. But this procedure will not succeed in all the cases of the second class, and after the glasses have been adjusted the squint remains. We must then decide on an operation and look for our indications in the power of the opposing muscles.

An upward or downward squint will, as a rule, only require a complete tenotomy on the most powerful muscle, while in the lateral squints, particularly those of slight degree, we may advance or shorten the weaker muscle, if indicated, or, finding that of normal power in the field of fixation, we may safely do a complete tenotomy.

In all the cases of this second class they must be carefully studied according to their degree and indications, but in *all* the correction of the refraction must follow the operation.

In the first class I do not think the educational treatment will be of any service, but in the second class the education of the squinting eye to fix and to appreciate the images will be of great service, and in closing I might say that this is the object of this paper, namely, to prove that in certain cases it is useless to resort to any measures except an operation and inothers to do all we can, both before and after the operation. I have tried to show the indications for each procedure.

CORRECTION OF DIVERGENT STRABISMUS BY A NEW METHOD AND NEW INSTRUMENT.*

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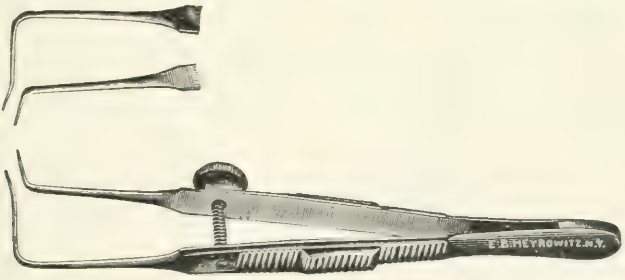
Illustrated.

It is not the desire of the writer to enter into a detailed discussion of the ætiology and diagnosis of the various kinds of squint, or to review the different operations for their correction. I shall not thresh over old straw by reiterating what can be found in every text-book of ophthalmology further than is necessary to bring this subject before you.

The various operations which have been proposed and practiced for the correction of divergent squint, as is well known by those experienced in operating, have not been universally satisfactory to the surgeon or to the patient. In fact few oculists of wide experience with whom I have discussed the operation of advancement of the rectus internus for divergent squint have hesitated to acknowledge their failures, and that the operation is one unsatisfactory in many instances. There is no operation which I have undertaken with greater circumspection and fear. Whether the operation be that of George Critchetts, or the hitching thread of Agnew, the anchoring thread of Prince, or the clamp forceps of Wecker, while each has its advantage, they have also elements of weakness. One common source of failure, however, is cutting the tendon from its ocular, or bulbar, attachment.



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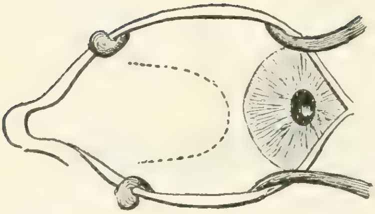
*Read before the *Mich. State Med. Soc.*, May 6, 1899.

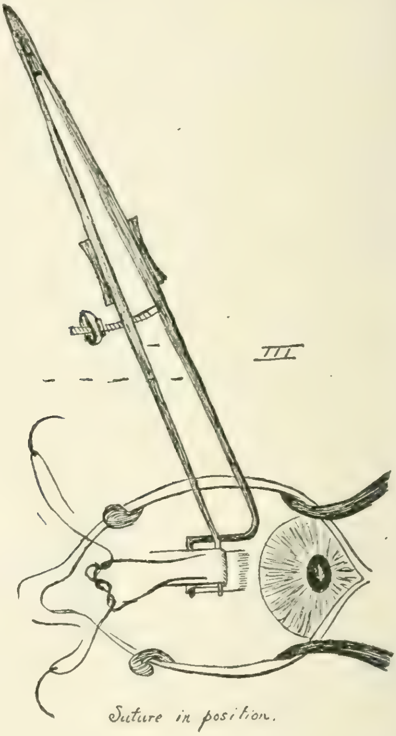
When the tendon is once severed, or cut loose, and fastened by sutures, should the sutures fail to hold it, either because of slipping or cutting through the tissues, which they so frequently do, the muscle is liable to recede and the deviation of the eye outward to become greater than before the operation. When this accident has happened, a second operation is hard to execute, and is undertaken with dread by the surgeon as well as by the patient. If the sutures which are passed through the conjunctiva and emerge near the vertical diameter of the cornea (as in the Critchett operation), cut or slough, very little effect of advancement will be secured. If the sutures are carried into the scleral or epi-scleral tissue deep enough to prevent their cutting their way out, there is danger of wounding the intercommunicating lymph spaces and filaments of the ciliary nerves. Again all operations in vogue necessitate leaving in the sensitive conjunctiva several sutures and knots which excite, in many instances, a high degree of inflammatory action and swelling, which

IIa.



Outline of Incision for
Reverse flap

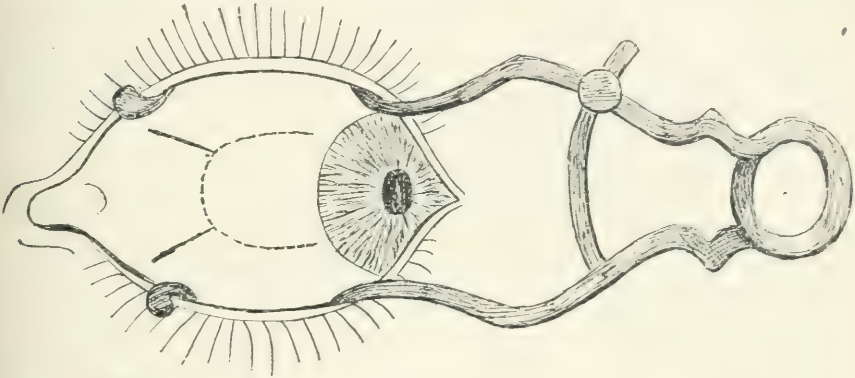
III



Suture in position.

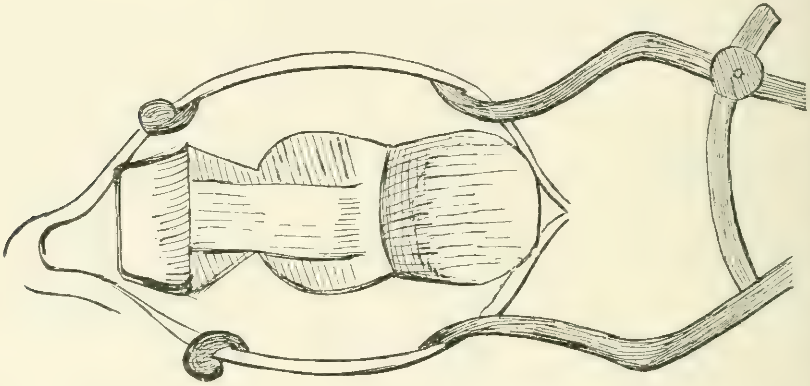
tends to cause divergence of the eye we have tried to converge by the operation.

I had tried several expedients to get rid of the objectionable features of the operation which I have already mentioned, when several years ago I conceived the idea of taking a tuck in the tendon, which I did several times by the use of the sutures. I thought it a new idea, but upon searching the literature on the subject I found it had been done before by J. F. Noyes, of Detroit, in 1874, and by Lagleize in 1892. The methods proposed by them, while doing away with the dangers of detaching the tendon, still necessitate the objectionable conjunctival sutures. To avoid these and the bad results of the muscles slipping back and the consequent divergence of the eye, I have invented an instrument called a Tendon Tucker.



Outline of Incision

The instrument is made with two spring blades like those of Knapps' roller forceps. On blade 1 there is a tine about 10 mm. in length and 1 mm. in diameter, tapering slightly toward the point and turned at right angle to the edge of the blade. On blade 2 there is an angular arm 15 mm. in length turned at right angle to the flat of the blade and toward blade 1. On this arm is a tine turned at right angle to the edge of blade 2 and parallel to the tine of blade 1, and of the same size. It is so constructed that the tine of blade 2 passes beneath blade 1. A set screw with a milled nut passes from blade 2 through blade 1. With this the blades can be fixed at any point desired. It is better to have two instruments, one for the right and one for the left eye, so that the tines can be inserted from above downward, which gives free access for the introduction of the suture in the tendon, the blades being above and out of the way. With this instrument the operation is much easier executed, and is done with less risk and in much less time than by the old methods. Those who have tried the muscle-folding operation of Noyes and Lagleize by the use of sutures, have, I believe, found it a difficult task to perform. My operation is quite different from any other and is done and is as follows: The patient is told to look to the side in the direction of the divergence, thereby turning the eye as far outward as possible. The conjunctiva is raised with a pair of fine forceps (iris forceps are good) and with a pair of fine curved scissors, with the hollow side toward the cornea, commencing near the corneal margin (2 or 3 mm.) and 6 mm. below the horizontal axis, a curved incision is made ending at the horizontal axis, about 12 mm. from the sclero-corneal margin. Then turning the scissors and commencing above the horizontal axis about 6 mm. a second curved incision is made to intersect the first, thus forming a flap 12 mm. in length. Two incisions are now made in the conjunctiva, one obliquely upward and inward, and one obliquely downward and inward. These latter incisions include tenons capsule.



Tendon Exposed.

When these flaps are turned back the tendon of the internus will be fully exposed. The muscle and tendon are then separated completely from all surrounding tissue, except its attachment to the globe. When free the tine of the straight blade of the instrument is passed beneath the tendon from above downward, while the tine on the angular blade rests upon the tendon near its insertion. Now by pressing the blades together the tine resting upon the tendon passes under the other tine, and makes a tuck in the tendon which it pushes beneath the muscle. Now the milled nut is screwed down and when the eye is perfectly straight, or has been carried inward a little past a correction, the instrument is held by an assistant, and a stitch is taken in the fold of the tendon as follows: A No. 1 steralized catgut suture is armed with a curved needle at each end. One needle is passed through the fold between the tines from within outward about 1 mm. from its upper edge; then the other needle is passed through in like manner 1 mm. from the lower edge. The needles are now removed and the two ends of the suture tied by a surgeon's knot, which securely holds the fold. The conjunctiva is now replaced and a stitch or two taken in the flaps, which brings them over the catgut suture and the folded tendon, and causes the conjunctiva to unite in 36 or 48 hours. The eye is bandaged for a day, or cold compresses may be applied for a few hours and then bandaged. There is a slight lump left at the point were the tendon is folded, but it soon disappears. The tendon in cases of divergent squint is usually elongated and thin, reaching 13 to 15 mm. or more, while the tendon normally is but 9 or 10 mm. in length. This thinning of the tendon makes the old operation harder and the one with my instrument easier to perform than if it were in the normal condition. Should the suture fail to hold the tendon until union takes place in the fold, a second operation is easy to perform because the tendon is in its normal position and attached to the globe and will not recede, as sometimes happens where it has been detached. This accident has never happened to me after an operation of tendon folding such as I have described. The cause of failures in other tendon-folding operations which have been done by stitches, is that the surfaces of the folded tendon are not brought into perfect coaptation.

With the instrument which I have devised the tendon is perfectly folded and held while the suture is inserted and securely tied across the fibers of the tendon, instead of lengthwise, as is the case in some operations.

It gives me pleasure to acknowledge the valuable services of my friend, Dr. John R. Rogers, in producing the drawings illustrative of the operation described in my paper, which are presented herewith.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, SEPTEMBER, 1899. NO. 9. NEW SERIES.

EDITORIALS.

ANTIPATHY TO BINOCULAR SINGLE VISION.

Such cases, fortunately, are not very common; yet, unfortunately for the sufferers, they are not always recognized. Such a case came under the observation of the writer to-day, a correct diagnosis having previously been made by Dr. Manning Brown, his former pupil. The case has always been one of alternating squint and early in life was operated on with the view of straightening her eyes. The operation failed, and later another was done. Still later a third, and then a fourth operation was done, each one resulting in increased annoyance to the patient. At first the squint was internal and the false image was too far away from the true to be very troublesome. After each operation the diplopia became more annoying. Dr. Brown was led to his conclusion of the hopelessness of effecting binocular single vision by the fact that he could not fuse the images by means of prisms. He could make them approach, sometimes closely, but they persistently declined to fuse. The refraction was 2.50 D. hypermetropia, each eye. The correcting lenses gave no aid, although vision was practically perfect in each eye.

Can these cases be diagnosed? If diagnosed, what should be done? In answer to the first question it may be said that, with proper care, a reasonable conclusion can be arrived at. Such cases are nearly always alternating internal squint in the beginning, that is, before any operation has been done. Vision in the two eyes is about perfect after correction of errors of refraction. Now, double vision is not a prominent symptom, though occasionally it is present (after operations diplopia is nearly always complained of). The red glass before one eye will always bring out the diplopia, but every attempt to fuse, by means of prisms, the red and the white lights, results in failure. A prism of one strength bringing the two lights close together, the prism next in strength will throw the false on the other side of the true, or it will rise above or pass below it.

What should be done in such a case ? When images cannot be fused by means of prisms, operations cannot effect a fusion, and therefore should not be attempted. The only satisfactory explanation for this condition lies in the possible fact that the "yellow spot" in one eye is connected with the right side of the brain and, in the other eye, with the left side of the brain. It would appear reasonable that the mind cannot interpret as one, similar impressions made on brain cells in the opposite halves of the brain.

Any attempt at relieving disfigurement will create an annoying diplopia which can be relieved in only one of the following ways: Cover the eye that is least frequently used; render the one eye highly myopic by a strong convex lens so as to favor mind suppression; or blind one eye by optic neurotomy. Any operator would be slow to resort to the latter procedure, for obvious reasons, but in some of these cases, and because of improper muscle operations, it might be justifiable.

Every case of alternating squint with fairly good vision in each eye should be looked on with suspicion, and should be dealt with carefully.

G. C. S.

MICROSCOPES FOR THE EXAMINATION OF THE ANTERIOR SEGMENT OF THE EYE.

Besides the many modifications of the simple microscope, or strong convex lens (loupes), proposed for use in examining the eye by oblique illumination; there have been a number of attempts to utilize the compound microscope for the same purpose. The first was probably that made by Liebreich (1855), who substituted a microscope body for the mirror of his large demonstrating ophthalmoscope. Among the latest attempts in this direction have been those of Aubert (1891), who by a double inversion secured an erect image; and Barkan and Schanz (1893), who illuminated the cornea by an electric lamp, the rays from which were concentrated by a convex lens upon the point for which the microscope was focused.

A new form of compound microscope for viewing the eye has been worked out by Mr. H. L. De Zeng, Jr., and described (*New York Med. Jour.*, June 17, 1899), by Dr. Lucien Howe, who suggests it might be called a Kerato-iridiscope. It is especially notable for the size of its objective, and the ease and convenience of its adjustments. The objective has a clear aperture 32 mm. in diameter. It admits so much light that a well illuminated image is obtained with ordinary daylight, although strong lateral illumination does somewhat improve it. The size and flatness of its field are very satisfactory; and it is of value for photographing the anterior portion of the eye.

In addition to vertical and horizontal adjustments, the tube is so swung upon the column which supports it, as to give a universal motion that greatly aids in keeping the desired part of the eye steadily in view within the field of the instrument. This largely overcomes one of the chief difficulties heretofore encountered in using instruments of its class.

The chief advantage of the compound over the simple microscope, for the examination of the eye, is that with the former higher magnification can be obtained, without bringing the instrument so close to the eye as to interfere with the illumination. With the simple microscope, the lens must be brought within one inch of the eye to get an enlargement of ten diameters. But the instrument in question with a free space of two inches between it and the eye, magnifies from 20 to 125 diameters. With the lower powers it can be very well used without any special rest for the patient's head; but with the higher powers something of the kind would be desirable.

Perhaps the most serious defect about the instrument described by Howe is that it is monocular. This defect is shared by most of the various forms of "loupe" used by Ophthalmologists. Still it is a serious matter to be deprived of the advantages of binocular vision, in making a clinical examination of the cornea and iris. Aubert's instrument is binocular; and Westien applied Bruecke's loupe (made on the plan of the Galilean telescope or opera-glass), to the binocular examination of the eye by oblique illumination.

Under the name of binocular corneal microscope, S. Czapski, of Jena, describes (*Graefe's Archiv. für Ophthalmol.*, Band xlviii. Abt. I, 1899), an instrument for which he employs illumination by an incandescent lamp attached to the instrument; and in which an erect image is secured by the prism systems of Porro. The axes of the objectives are set at an angle of 16° ; and one of the eye-pieces is made adjustable, so that by it the observer may correct any anisometropia he may have. The magnifying power of the instrument ranges from 9 to 63 diameters; and with the highest power the distance between the observed eye and the objective is 28 mm. The diameter of the objectives is not stated; but from the illustrations accompanying the description, and the necessities of the case, it seems that the illumination of the magnified image must be quite inferior to that obtained with the instrument described by Howe.

With regard to the usefulness of these instruments, it is probable that Laqueur is too pessimistic when he says (System of Diseases of the Eye, Edited by Norris and Oliver): "The use of the corneal microscope is illusory. There is no new fact that owes its discovery to the microscope in its application to the living eye. Whatever can be seen by its means can be seen more easily and surely with the binocular corneal loupe. For this reason it is rarely used, and it is doubtful whether it will ever be useful in examining the living eye."

While admitting that it is yet of but little clinical value, I believe it has a real value for the prosecution of original investigations, particularly of diseases of the iris. The turbidity of the cornea that commonly attends corneal disease, very generally prevents any gain by high magnification. But slight changes in the iris are often strikingly demonstrated in this way. When the application of the binocular lens has made Ophthalmologists more generally familiar with the appearances of the eye in various diseases under an amplification of from 5 to 10 diameters; and when original investigators have accumulated a certain amount of data with the compound microscope, it is but reasonable to anticipate for the latter instrument an important field of clinical usefulness.

EDWARD JACKSON.

CORRESPONDENCE.

THE REFRACTING OPTICIAN.

To the Editor of the Ophthalmic Record:

In the writer's opinion, the optician question will cease to be an abuse when ophthalmic surgeons adopt the method that has been used by himself for some time with satisfaction to his patients, and to himself.

It is understood that the average optician is in active competition with us, doing all the *fitting* that he can, sending us only the cases that he finds he cannot help; also in many of the cases which we send to him with prescriptions, taking the liberty of changing these without orders from us, and often making slighting remarks regarding us in particular and oculists in general. This being the case, the spirit of protection compels us to take means to combat this condition, and this can be done without much compunction, as the average optician is so only in name, not making his glasses, but sending his orders to some larger house. It was the writer's custom before removing to this city to furnish his patients their glasses, and this custom has been reëstablished for his protection, *with the important addition of furnishing prescriptions at almost cost.* This enables patients to see that they have been paying from one to ten hundred per cent profit, and they will probably realize that they are, perhaps, not gaining as much as they thought by patronizing opticians. In my own case the satisfaction of patients in obtaining their glasses, *plus* the fee for an examination at about the cost of glasses from an optician, is at least noticeable, and will in time, if adopted, bring the price of glasses down to a reasonable figure, which fact in itself will correct the abuse, as the great profits in prescription work is what calls so many to this work. A large wholesale drug house states that hardly a day passes without several inquiries being made as to where *fitting glasses* can be learned. This method can be made practical, as with some care and practice frames can be obtained that will, at least fit better than most of those noticed on the street, and such work can be given to one's clerk after instruction. Steel frames and spherical lenses can be furnished at a profit at fifty or seventy-five cents, and compound lenses in the same frames at from seventy-five cents to one dollar, and at such prices will drive the *refracting optician* out of the field and leave work enough for honest prescription opticians, with whom the ophthalmic surgeon should be on the most cordial terms.

WM. E. BAXTER,
553 Boylston St., Boston.

CATAPHORESIS OF THE LACHRYMAL DUCT.

TO THE EDITOR OF THE OPHTHALMIC RECORD:

In your May number I see an article by Dr. Geo. F. Keiper of Lafayette, Ind., on "Cataphoresis of the Lachrymal Duct." This is an abstract of a paper in which he claims originality for these cupped sounds. I have before called his attention to the fact that he is not the author of the instruments nor the method. He has in his possession Wm. H. Armstrong & Co.'s Catalogue, edition 1894, in which are described and illustrated Brewster's Cupped Lachrymal Sounds, which are practically identical with those shown in his illustrations. His conclusions so dogmatically stated are absurd. Purulent inflammations of the sac and duct do not "yield better to this form of treatment than any of the older methods." The method is itself an old one and practically abandoned. As Dr. Keiper buys his instruments from Armstrong & Co., of course he is familiar with the catalogue named.

Your readers will of course remember his "Original Method of Treating Trachoma" published in the RECORD. The method there described was simply the use of copper electrodes or the oxychloride of copper treatment, which had been known for years and published in McIntosh's Electrical Catalogue and everywhere else. I mention this old article published by the doctor merely because the article in regard to cupped sounds for the lachrymal duct and the one in regard to trachoma were united into one paper when read before the County Medical Society here. At that time in the open meeting I called attention to the doctor's lack of sincerity.

W. H. PETERS, B.S., M.D.

REVIEWS.

Orbital Complications of Empyema of the Ethmoidal Cells. By Dr. Vieusse (of Toulouse), *Recueil d'Ophtalmologie*, March, April, May, 1899.—We all know the close relationship which exists between diseases of the eyes and disturbances in the neighboring sinuses, and yet, strange to say, the subject has not been ventilated as it should have been. Panas, in his book, has devoted one chapter to this question, but it cannot be said that he has brought forward any points which would be especially valuable to the surgeon in making the diagnosis nor has he given us any valuable therapeutic suggestions. It is true that here and there in literature one will find references to the subject, but as a rule the author has not recognized the connection between the point of departure of the trouble and the complication to which it gives rise in the orbit, and as a consequence we have uncertainty in diagnosis and in treatment. Vieusse, of Toulouse, has recently analyzed many of the cases reported, and has presented some valuable conclusions. In order to appreciate the subject in its entirety Vieusse has touched upon all its aspects, not only upon the orbital complication, but he has also gone thoroughly into the history at a period before the disease manifested itself in the orbit. He gives an elaborate description of the normal anatomy of the ethmoidal region which need not be discussed here. More pertinent, however, is the description of the changes produced in this locality by disease.

The first thing that strikes us are the changes in the mucus membrane. We find congestion and even hemorrhages which may be attributable to the loose structure of the mucus membrane. This congestion extends to the deeper layers. Purulent secretion is only seen after hyperæmia has existed for a long time, in which case we find the membrane much softened and frequently infiltrated with a yellowish liquid. When the catarrh has become chronic the exudate is seen chiefly in the internal lining of the mucus membrane. We have here great relaxation and swelling of the membrane, which is now several times its original thickness and somewhat resembles jelly. The glandular apparatus undergoes cystic degeneration. Ordinarily the cavity of the ethmoidal cells is simply narrowed in proportion to the swelling in the mucus membrane. Purulent inflammation of the mucus membrane of the cells is less frequent than catarrhal inflammation. In the purulent variety the cells enclose a more or less large quantity of purulent mucus, and sometimes their cavities may be filled with either a purulent or a bloody exudate. The result of all these changes is that we have either a narrowing or a complete closure of the avenues of communication between the ethmoidal cells and other pneumatic cells in the vicinity. In chronic catarrh, where the inflammation has been present in the deeper layers of the membrane, we get periostitis with the development of exostoses, which later on may be seen loose in the cavities of the cells. We have sometimes destruction of the osseous surroundings of the labyrinth. When this condition of the mucus membrane has disappeared it can regain its normal appearance.

These, then, are the chief anatomical changes, and the author goes on to report a case which he had seen in the Hôtel-Dieu.

The patient was a man who had been for three months a sufferer with epistaxis from the left nostril. Violent pains were felt on this side of the head, and a small tumor appeared at the inner angle of the eye on the same side. The tumor jutted out slightly and forced the eyeball outward and downward. The movements of the eyeball were intact, but the patient complained of diplopia. There was a nasal twang to the voice which was easily explained by the discovery of an obstruction in the left nostril. The tumor was soft and fluctuating. The ophthalmoscope showed dilated and tortuous veins and narrowed arteries, V. about 1/5.

An incision 6 cm. long was made, starting from the inner canthus and parallel to the lower border of the orbit. After getting through the skin and subcutaneous tissues, a cheesy yellowish-looking substance resembling tuberculous matter was pressed out. After removing this debris it was demonstrated that the inner wall of the orbit was almost entirely destroyed. The index finger was passed through the opening and it was found that the nasal fossæ was also filled with this tuberculous material, which was removed with curette. Drainage was accomplished through the corresponding nostril. Eight days later the wound had cicatrized and the diplopia had disappeared. The difficulty, however, of respiration persisted, and a careful examination by a laryngologist revealed ethmoidal disease. The diseased area was cocainized and afterward curetted. In twelve days the tissues looked normal except that two little granulations were to be seen jutting out from the ethmoidal cells. These were gotten rid of with galvano-cautery. This last measure resulted in permanent disappearance of the symptoms.

Case II. When seen the patient (man) had slight exophthalmos and outward displacement of the eyeball. His left eye began to protrude four years previously, but no other local symptoms had ever been present. He was subject to frequent attacks of coryza, and usually the lachrymation on this side was very abundant. A few days after his entrance into the hospital there was to be seen decided enlargement at the inner canthus of this eye, and there was a muco-purulent secretion from the conjunctiva. No pain. In a few days, however, a dull and constant ache was felt over the eyebrow and from this point down over the malar bone, and this was accompanied with redness of the eyeball, swelling of the face on that side and loss of vision. There was also slight œdema of the lower lid, which involved the upper part of the cheek and extended toward the temple. The exophthalmos was quite pronounced and the eyeball was pushed outward and downward. The muscular movements were intact, there was no diplopia, and the vision was hardly 1/5. The upper part of the eyeball was very red, and this injection extended toward the sclera and was more pronounced at the inner angle of the eye. There was a slight muco-purulent secretion. Palpation of the eyeball caused pain, and on pushing the finger into the orbit upward and inward a growth was felt which did not extend quite to the orbital rim. It appeared to be about the size of a hazelnut. The tear channels seemed all right, and there was no excrescence in the fronto-orbital region. For a long time there had been a coryza, and when the patient blew his nose violently he felt pain at the inner side of the orbit. From the rapidity with which these symptoms had manifested themselves acute tenonitis was at first diagnosed. The presence of the swelling at the inner angle of the orbit and the deviation of the eyeball soon dissipated this theory. Examination of the antrum of Highmore and of the nasal fossæ showed these parts to be sound. There was then no implication on the part of the frontal sinus. In the course of a few days the œdema of the lid and of the jaw disappeared, but the deviation of the eyeball persisted. The patient was chloroformed and an incision was made commencing at the inner angle of the orbit about a centimeter from the palpebral fissure, then on upward and outward under the eyebrow, following the ridge of the orbit for about five centimeters further. When the bone was reached the periosteum was detached and the tumor exposed, and no sooner was the latter touched than the characteristic crepitation was noticed. On penetrating the tumor the instrument passed into a cavity and at the same time a mucoid fluid escaped through the wound. The orifice was enlarged and the finger introduced, and it could be easily seen that the cavity extended toward the base of the skull. The diagnosis was made of dilatation of the ethmoidal cells. The cavity was irrigated with boric acid solution and a large mass of mucus was brought away, but no purulent material. A drainage tube was introduced and iodoform dressing applied. In two days all the symptoms had ameliorated and the vision had mounted up to ½. The irrigations were continued and always a large mass of muco-purulent matter was washed out. Two months later vision was practically normal. This was the only case which was observed by Vieusse himself, all the remaining cases which he describes having been recorded by others.

In case IV. the frontal sinus was opened four times and cleaned out; and while there was improvement after each operation, it was evident the disease had not been properly located, as was ultimately shown by the speedy and permanent disappearance of the symptoms following the discovery and removal of diseased areas in the ethmoid cells. The objective symptoms in this case were the same as in cases I. and II.

Case VI. was rather interesting. The patient was a child and had a fistula at the inner angle of the left eye, and had been under treatment for a long time for dacryocystitis. Exploration showed that the fistula extended far back and suggested that the origin of the trouble might be either in the ethmoidal cells or in the sphenoidal sinus. Two operations were performed and at the second operation an opening was made clear up to the nasal fossæ and the seat of the trouble was found to be in the ethmoidal cells. Case VII. resembled in many features the foregoing one. Case X. (reported by Dr. J. H. Bryan of Washington, D. C.). The patient was a man sixty-eight years old. For ten years he had been a sufferer with intense neuralgia, located at the inner angle of the left eye, extending over the face and head on that side and always aggravated by an acute coryza. For several years there had been a discharge of a yellowish pus from the left nares. No orbital tumefaction and no visual disturbance. Investigation with a sound showed caries of the anterior ethmoidal cells, which region being well opened recovery soon followed.

Case XIV. (reported by Raoult of Nancy). A child of eight years, who had a fistulous opening at the inner angle of the left eye. Pus was constantly escaping from the opening. The child had had scarletina and on recovery an abscess showed itself just where there was now a fistulous opening. The trouble was treated for some time as an affection of the lachrymal sac, inasmuch as there was profuse lachrymation. There was difficulty experienced in breathing through the left nostril. The inferior turbinate bone was hypertrophied. After the usual incision the fistula was curetted and a large quantity of osseous material was removed, though no sequestrum was found. Twenty days later the wound appeared cicatrized. Three weeks later another abscess formed at the edge of the old fistula. The external opening was enlarged and an opening made into the nares, removing at the same time some of the middle turbinate bone. The ethmoidal cells were then curetted. The trouble disappeared within a few weeks.

SYMPTOMATOLOGY.—The conspicuous symptoms are tumefaction of the lid, exophthalmus and a tumor at the inner angle of the orbit. The tumor may either be diffused or it may be sharply defined, round or irregular in shape. The tumor usually ranges in size from a pea to a hazelnut, though it may run the whole length of the internal wall of the orbit and may even extend far back into the orbital cavity. The tumor is as a rule insensitive to the touch, though it may be the reverse, and it is soft and fluctuating and when strong pressure is made upon it one will often notice a discharge from the nose. At other times it may be soft anteriorly and behind it may be hard and elastic and give out the sensation of crepitation. The movements of the eyeball are only curtailed in a slight degree. The œdema of the lids is most marked at the inner third of the lid and may be confined either to the upper lid, or it may be present in both lids. Binocular vision is sometimes abolished and diplopia is not infrequently seen. Neuralgia is often present and is confined to either the inner angle of the orbit or it may be present all around the eyeball. Visual acuity may be affected in varying degrees. The ophthalmoscope frequently shows a hazy disc, arteries thin, veins dilated and tortuous, œdema of the retina and opacities in the vitreous body. Profuse lachrymation is often met with and may lead us to make a diagnosis of dacryocystitis. We may divide empyema of the ethmoidal cells into the acute and chronic form.

In the acute variety the disease manifests itself promptly by symptoms most marked in either the nasal fossæ or in the orbit, according to the starting point. If it involves the ethmoidal turbinate bones, one will notice difficulty of nasal respiration and the voice will have a nasal twang. Epistaxis and violent pains in the head are often present. The headache is most marked in the orbital region and is often worse at night. A very constant symptom is blenorrhea of the nose, which may be unilateral and is sometimes very abundant. Sulzer has noticed erysipelatous redness at the upper part of the nose. The discharge from the nose is usually odorless, except where all the ethmoidal cells are involved. Anterior rhinoscopy shows the middle meatus filled up with a whitish mass and posterior rhinoscopy discloses the condition of the naso-pharynx and to a certain extent that of the sphenoidal sinus. Polypoid masses more or less numerous and voluminous are often seen. According to Ruault indistinctness of the nasal bone in a subject suffering with a discharge from the middle meatus of the nostril and presenting at the same time a translucency of the corresponding maxillary sinus, is strong evidence that the disease is located in the anterior ethmoidal cells. It sometimes happens that the orifice which connects the ethmoid cells with either the orbit or the nose is closed and pus then accumulates in the cavity which contains it (Forme fermée). In such cases the mucus glands secrete more abundantly and the cavity of the sinus is soon filled, giving rise to a mucocele which exercises a gradually increasing pressure upon the walls of the sinus. So long as the pus remains shut up in the labyrinth and there is no ectasia, the symptoms are more or less vague and it is by no means easy to diagnose the condition. When the distension has caused the jutting out of the orbital wall we at once have the same character of symptoms as were described in the preceding variety of the affection.

In the osseous form of the disease we have necrosis and usually the os planum is the bone which is destroyed. In this variety of the disease we have all the symptoms which have been just described. When the os planum has been involved the orbital symptoms will predominate, and if the process has extended toward the nasal fossæ the principal symptoms will be a purulent discharge from the middle meatus and sometimes there will be an ozena. Grunwald calls attention to the importance of passing a sound in order to make a diagnosis in a case of this kind. Before passing a catheter it would be well to evacuate the pus. Under the hypertrophied middle turbinate bone one will notice a cleft giving passage to fungus tissue, and a stylet, if passed through this cleft, will come in contact with a denuded surface. Sometimes when the catheter is inserted between the middle turbinate bone and the external wall of the nasal cavity there will be revealed lesions in the posterior ethmoidal cells.

In the chronic form of empyema the disease is very insidious and the symptoms very vague. When the disease, however, has lasted for a certain length of time, the usual symptoms of the acute form will show themselves. The rhinoscopic examination will show obstruction in the nasal fossæ and there may be pus in the middle meatus and the probe will frequently encounter eroded bone. To sum up the distinctive symptoms :

Acute empyema is characterized by pronounced symptoms from the very beginning.

Chronic empyema is characterized by vague symptoms at first, but later on the symptoms of the acute form appear.

Then we have a form of the disease where the subjective symptoms are very much accentuated and where there is a purulent discharge from the nasal fossæ empyème ouvert in contradistinction to that variety of the disease where there is no such discharge, empyème fermé.

We have, too, empyema of the anterior and posterior cells, with the localization of pus in both cases, and finally we have the osseous empyema where the probe gives the sensation of necrosed bone.

Etiology.—The close anatomical connection between the ethmoidal cells and the nose easily explains one frequent source of infection. The posterior cells are particularly exposed to infection, as they open right into the superior meatus. In fact, every inflammation of the nasal mucous membrane may find its way to the ethmoidal cells. Bresgen has reported eleven cases of atrophic rhinitis where he found involvement of the maxillary sinus and ethmoidal cells. Traumatisms of any kind may give rise to ethmoidal empyema, such, for instance, as blows from the outside, operations unskillfully performed, i. e., within the nasal cavity. Congenital and acquired malformations of the orifices of communication between the labyrinth and other pneumatic spaces, malformations which give rise to occlusions and so prevent a sufficient ventilation of the cellular cavities. Affections of the sphenoidal sinus can also lead to ethmoidal empyema and several such cases are recorded. Measles, scarletina and influenza can lead to empyema of the ethmoidal cells. Baumgarten has reported cases where the empyema could be traced to syphilis, tuberculosis and even to typhus. There are two ways by which the disease can reach the ethmoidal cells: by the bony way and by the veins. Where the inflammatory lesions of the periorbital cavities (such as those which arise in the maxillary, in either the frontal or in the sphenoidal sinus) spread in the orbit we know that it is by a bony path.

Diagnosis and Prognosis.—Sometimes disease of the frontal sinus may extend to the ethmoidal cells, then again suppuration in the latter point can invade either the maxillary or the sphenoidal sinus. In these cases the diagnosis is not easy to make. Whenever we have empyema of either the frontal or the sphenoidal, or of the maxillary sinus, we can look out for complication from the side of the ethmoid, if after vigorous treatment suppuration continues. As regards the frontal sinus, we will find localized frontal pains either at the border of the sinus or radiating toward the temple and the nape of the neck, and aggravated by movements of the head and by pressure on the forehead. These pains are quite different from those one meets with in empyema of the labyrinth, where the pains are especially marked in the orbital region and are worse at night. We see more often in ethmoidal disease ectasia and perforation of the frontal walls. As a general thing, however, ectasia is a good deal less frequent in sinus disease and develops slowly. Whenever an ectasia is seen from the orbit we have an abscess varying in size from a hazelnut to a walnut and situated above the tendon of the orbicularis. The eye symptoms consist chiefly in œdema of the upper lid, especially at its inner angle, chemosis, some immobility of the eyeball, dilatation of the retinal veins and œdema of the papilla. Nasal symptoms are generally present, though Kühnt reports five cases in fifteen where nasal symptoms were absent. Usually we have at first an acute coryza, later on polyps are seen, the lower and middle turbinate bones swell, and most important is this symptom, namely, the flow of pus at the border of the middle turbinate. Catheterization and irrigation will confirm the diagnosis. When, after puncturing and irrigating the maxillary sinus, pus reappears some minutes after in the middle meatus, and when after catheterizing and irrigating the frontal sinus pus is not long in showing itself again, we may be almost sure that we are dealing with trouble in the anterior ethmoidal cells. Auscultation of the frontal sinus has been extolled by Czernicki as a means of denoting the presence of rales at the moment of forced expiration. It must be said, however, that the orbito-ocular complications of empyema of the ethmoidal cells can appear in disease of the frontal sinus, and in such cases the diagnosis is difficult, especially if it be a question of inflammation of the anterior cells. Illumination as practiced by Ruault is only valuable when taken in conjunction with other symptoms. The character of the pain is often so vague as to be valueless as a means of differentiating. We may have empyema of the sphenoidal cells confounded with inflammation of the ethmoidal cells, and when in doubt it would be better to do as Moure advises, employ the catheter. According to this author a sphenoidal affection is especially naso-pharyngeal, while an affection of the other cavities is oftenest nasal; one is posterior, the other anterior. The early appearance of optic nerve trouble would speak very positively in favor of sphenoidal disease. As regards differentiating from disease of the maxillary sinus, Panas has given us these points : A flow of pus from the corresponding nostril when the patient inclines the head forward, the preexistence of ozoena, the presence of caries of the upper molars on the same side, the presence of pus in the middle meatus. All these signs speak for disease of the maxillary sinus. When we meet with destructive processes in the ethmoidal cells with no accompanying pain we must think of syphilis as the cause and it may be said here that the objective lesions in cases of tuberculous origin present pretty much the same characteristics. The tumor may be confounded with a dacryocystitis. If it is reducible and empties itself on pressure into the nasal fossæ and the discharge is seen at the middle meatus we have ethmoiditis. The author then proceeds to speak of the various tumors, i. e., sarcomata, bony cysts, fibromata, which have been observed in the ethmoidal cells. Fortunately, however, these are very rarely seen. As a rule the complications of ethmoidal empyema are not serious; still in the presence of such complications there are manifest reasons for giving a more or less reserved prognosis.

TREATMENT.—1. Evacuation of the pus. 2. Treatment applied to the mucous membrane. Gruening, Stewart and others are in favor of intervention through the orbit. Gruening thinks that thereby we can—first, make the most direct inspection and exploration of the ethmoidal cells; second, we can easily remove vegetations and carious bone; third, there is a better chance of assuring drainage by a counter opening.

Grünwald, Hicquet, Baumgarten and others prefer intervention through the nose. It is evident from the opinions advanced by these observers that one method is not the best for all cases of ethmoiditis. Vieusse then describes the operative methods practiced by Knapp, Gruening and Chipault.

RANDOLPH.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. Ulry, Chief of the Ophthalmic Clinic in the University of Bordeaux, is dead.

Busts of Wunderlich and Wagner were unveiled May 2d, at the University of Leipsic.

The monument in memory of Mauthner was unveiled at the University of Vienna, March 19th.

The late Mr. William Taylor, of Southport, has bequeathed £500 to the St. Paul's Eye and Ear Hospital, Liverpool.

International Congress on Behalf of Blind. — An international congress for the amelioration of the condition of the blind is to be held in Paris, August 1 to 5, 1900. For particulars address the Secretary-General, Maurice de Sizeranae, Avenue de Breteuil, 31, Paris.

The annual meeting of the American Ophthalmological Society was held at Pequot House, London, July 19th and 20th. A very interesting meeting was held; but we would like to see all of the members of this Society come and work in the Ophthalmological Section of the American Medical Association.

The Other Eye. — On one occasion, when seated in a club dining-room, W. S. Gilbert, the playwright, was approached by a person, who said:

"Have you seen here this morning a man with one eye called James?"

Gilbert answered, in his drawling way:

"What was the name of his other eye?" — *Tid-Bits.*

THE VICTORIA EYE AND EAR HOSPITAL, DUBLIN.—At the second annual meeting of the above institution, held on February 14th, it was stated that a site for the new hospital had been approved. The estimate for the new building was £30,000, of which £19,000 had been received.

It was announced that Dr. C. E. Fitzgerald had resigned his position as surgeon, owing to other demands upon his time.

A PRACTICAL subject well handled is that of Dr. Snell's address before the ophthalmologic section of the British Medical Association, on "The Prevention of Eye Accidents Occurring in Trades," which he concludes are largely preventable. He would make the use of eye protectors compulsory for workers in iron and steel, whose employment renders them liable to be injured by iron or steel splinters, or who are exposed to danger from molten metal.

A PECULIAR disease has been discovered in a herd of cattle near Clare, Iowa. Within a month, out of a herd of seventy-five, one-third have lost their sight. There is no known cause for the disease, as the pasture is one which has been used for several seasons. Stock-buyers and stock-growers are puzzled about the matter, and say they have never known anything like it. The blindness is peculiar in its character, and is caused by a film forming over the eye. State Veterinary Surgeon Gibson will examine the herd.

A WRITER for the *New York Medical Record*, writing from Penang, S. S., says:

"I think there would be a great field here for an eye and ear specialist, as there is a very great deal of eye and ear disease. Cataract is especially common. Tuberculosis prevails to a limited extent only. The influenza has prevailed to a large extent on at least three different occasions within the last few years, and appears to have left behind a legacy of weakened constitutions, which succumb more readily to the attacks of pulmonary tuberculosis."

APPOINTMENTS. — Dr. Bass, of Freiberg, has been appointed Extraordinary Professor.

Dr. Snellen, Jr., has been appointed Professor of Ophthalmology in Utrecht.

Dr. Velez has been appointed Assistant Professor of Ophthalmology in the Faculty of Medicine of Mexico.

Dr. B. E. Fryer, of Kansas City, Mo., has resigned the Chair of Clinical Ophthalmology in the University Medical College of Kansas City; and has been elected Clinical Professor of Ophthalmology in the Medico-Chirurgical College, and also Professor of Ophthalmology in the Woman's Medical College of Kansas City. Dr. J. S. Lichtenberg, of Kansas City, has been appointed adjunct to these professorships.

THE CAUSE OF BLINDNESS IN CHILDREN. — Dr. Forster, director of the Ophthalmological Clinic at Breslau, has recently published some instructive statistics regarding the causes, other than ophthalmia neonatorum, of blindness in children. According to these, injury to the eyesight, with consequent blindness, is mostly occasioned by carelessness, more than twenty per cent of these cases being caused by playing with sharp instruments, and twelve per cent by malicious injury, such as blows, stone-throwing, whipping, and unsuitable means of correction. Similar results are shown by the statistics of most other ophthalmological clinics. Boissoneau, of Paris, reports that of nine hundred and thirty-nine children who were blind in one or both eyes, more than three hundred and fifty were injured by shooting and by the explosion of percussion caps. — *New York Medical Record, May 20, 1899.*

MOORFIELDS is a name that at once calls up the thought of the great ophthalmic hospital of which the fame has gone forth into all countries. The old building became too straitened for its work, and removal was determined on. A site in the City Road was secured, and the Prince of Wales laid the foundation stone of the new hospital in 1897. On Tuesday last the Duke of York, accompanied by the Duchess, performed the ceremony of opening the new buildings. Moorfields has long been the resort of all ophthalmologists who visit London, and is likely to maintain its honorable position as a scene of important discovery and a school of ophthalmic medicine and surgery. As a hospital it is so famous that there is no doubt that at times it has been resorted to by many well able to pay. It is hoped that this abuse will in future be kept in check.

WOMAN'S QUICK TACT. — The following story illustrates a woman's quick tact in an emergency. It is about a college president who is a great gardener and wears a glass eye. One day this college president — it being summer and he on his vacation — rushed in from the garden all soiled and spattered, and without his glass eye. His wife was seated with a caller of importance. She perceived the special unfitness of her husband's condition, and frigidly said to him: "John, go at once to the library and tell your master Mrs. ——— wishes to see him." He went, and soon reappeared, clothed, eyed, and in his right mind.

This college president, it is plain, is himself a man of presence of mind. There are plenty of men who, confronted by such a remark of genius as this, would have stared and faltered out: "But, my dear, ———" and spoiled it all.

It is gratifying to learn that the laity and the lay press are commencing to get the proper ideas of how, where and when to secure scientific refraction work, as is indicated by the following clipping from the New York *Post*:

"Looking back now to the time when the itinerant quack doctor and the wandering dentist spread misery and destruction over the land, we wonder at the tremendous ignorance or carelessness of our fathers in trusting their teeth, or even their lives, to hands so untrustworthy. A very similar thing is done to-day by people who buy spectacles or eye-glasses from men who sell them on the streets, or have their eyes fitted by opticians who have no qualifications for doing the work.

"A surprising number of people buy their glasses from venders on the streets. They get glasses for 50 cents which seem to them just as good as a pair they would pay $5 for having made on an oculist's prescription, and then they think they have saved money. Glasses acquired in all sorts of ways, by inheritance or exchange from a friend, or even glasses found on the street, are used to the detriment, even to the destruction of the wearer's sight. 'People seem to think glasses are like clothes,' said an oculist this morning, 'and if they are fairly comfortable, and look well, they ask ask no further questions.' Another way in which people damage their eyes is through carelessness in trying to remove dust and cinders from them. They themselves, a friend tries to rub, the nearest drug store, and the nearest optician is called on, all before an oculist is consulted. The result is that the eyeball is often badly rubbed and scraped, and in many instances permanent injury is done."

Dr. Moon's Quick Ear—How Blind Type was Invented for the Chinese.—The sensitiveness of the organs of touch and hearing possessed by the blind is illustrated in a remarkable manner by the following story of Dr. Moon, the inventor of the Moon type for the blind, says the *Youth's Companion*:

Soon after the introduction of the type an opportunity occurred to test its adaptability to foreign languages. The experiment was first made in Irish, and proved entirely successful. Strangely enough, the next was the Chinese. Knowing something of the great prevalence of blindness in China, he longed to provide embossed reading in that tongue. One day an old friend, a captain in the navy, greeted him with the words: "So, Dr. Moon, I hear you can't leave the Chinese alone now?"

"Not while they have any blind among them," was the reply.

"Well, would you like to see a real Chinaman? If so, I will with pleasure introduce you to a Chinese gentleman, a friend of mine." And Dr. Moon met the foreigner the following evening.

The Chinese gentleman, Mr. Ho Chee, gratified his visitor by repeating the Lord's prayer several times in the Ningpo dialect. The ear of the listener had long been trained in the accurate distinguishing of sounds, and he dictated to his secretary the Chinese syllables as his ear had caught them. When he parted from his oriental friend he gave himself up to the task of adapting his alphabet to the Chinese language.

On the evening of the following day he was ready to pay a second visit to his new acquaintance. After unrolling his embossed page he read aloud the words "Woo Ting Foo," but he was allowed to go no farther, for the Chinaman sprang from his seat, and, putting one hand on Dr. Moon's chest, and the other on his back, patted him before and behind, exclaiming, "Oh, you got 'Our Father!' You shall have some tea." And it was not until he was refreshed with a cup of the fragrant bohea that he was allowed to proceed with the prayer, which proved to be substantially correct. Thus began embossed reading for the Chinese blind, which has since been greatly developed, and adapted to several others of the dialects beside that of Ningpo.

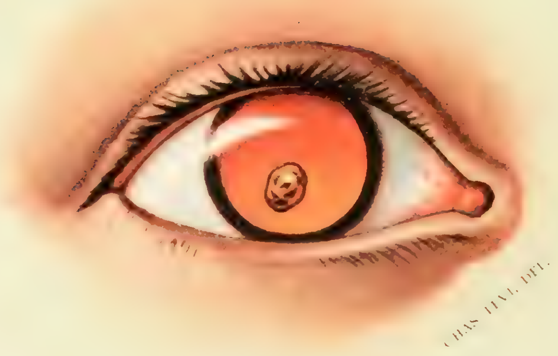
In view of the increasing prevalence of vertical handwriting, and its bearing upon vision, the following clipping from one of the daily papers may be interesting:

VERTICAL HANDWRITING.

EDGAR ALLAN POE EVOLVED IT FROM HIS INNER CONSCIOUSNESS.

"The vertical penmanship that is now employed in the New Orleans school is a great improvement on the old style," said an experienced educator, chatting with a New Orleans *Times-Democrat* writer about modern innovations. "It is not as decorative as the familiar 'Spencerian'; but it can always be read, which one must admit is certainly an advantage in the matter of writing. The vertical system is supposed to be comparatively new; but it is a curious fact that I have never seen adverted to in print that it was employed in nearly all its present details by Edgar Allan Poe during the early days of his authorship. I examined several pages of Poe's manuscript not long ago in a fine collection of autographs, and I was impressed at once by the similarity of his handwriting to that now taught in the schools. It was remarkable. In fact, the only difference I could find was in the formation of his capital T's, which were made in the French style. The vertical scheme is said to be the result of a great deal of scientific experimenting along the lines of legibility and speed. Poe evolved the same thing out of his inner consciousness. His writing was beautifully clear; and he said, you know, that he cultivated it to attract the attention of people who read manuscript for the magazines. Thomas A. Edison, by the way, writes a hand that resembles it to a really startling degree."

TRACHOMA.—Alkire considers trachoma as an infectious disease, favored by lower vitality, and he sums up the indications for treatment as follows: 1. Absolute cleanliness and good hygienic surroundings. 2. Improvement, if possible, of the nutrition of the body by correcting the existing abnormal conditions. 3. Removal of the trachoma bodies and the use of antiseptic solutions in the eye. 4. Correction of the refractive errors. 5. Treatment of sequelæ according to the nature and indications.—*Medical Monograph, abstracted from Journ. Amer. Med. Asso.*



CYST OF THE VITREOUS.

J. Oscroft Tansley.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, OCTOBER, 1899. NO. 10. NEW SERIES.

ORIGINAL ARTICLES.

CYST OF THE VITREOUS.*

BY J. OSCROFT TANSLEY, M.D.,

NEW YORK.

With Colored Frontispiece.

I have the pleasure of bringing before the society this year an interesting case of cyst of the vitreous. It is, as I take it, a simple cyst as we understand that term in surgery.

A cyst may be defined as a cavity bounded by a distinct envelope composed of fibrous tissue lined with endothelium and called a cyst wall; or it may be covered by epithelium and certain secreting structures: a cyst may result from the increase of the secretion of an already formed space or cavity by extravasation into it, or the cavity may be a new formation.

The patient, L—— B——, age 17, is the son of a practicing physician of New York City, and he came to me for advice January 4, 1897, saying that his sight in the right eye had been defective for about a year: there was no pain or discomfort of any kind, but he thought he could not see as well as he had previously; there had been no change for the past year, and it had become no worse than when he first discovered that it was affected.

R.V.=20/100; W.+1/48=20/70.
L.V.=20/20+; H.M.=1/72.

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*Patient shown at the meeting of Am. Ophth. So. at New London, Conn., July, 1899.

After putting beneath the lid a disc of cocaine and homatropia, and waiting for full dilatation of the pupil:

R.V.=20/200; W.+1/48=20/100.
L.V.=20/20+; H. M.=1/72.

Ophthalmoscopic examination shows—

L.E. Normal and emmetropic.

R.E. Hyperopic Fundus healthy. Examining with a +1/6, a very pretty picture of a floating body in the vitreous was seen, and I present a color drawing which illustrates the condition very charmingly. It was drawn by an artist friend, Charles Levi, whom I taught to use the ophthalmoscope in order to see this particular case. The floating body was spheroidal, of about the diameter of the optic disc, and at that time occupied about the center of the vitreous chamber. Its specific gravity was apparently but a trifle greater than that of the vitreous body, for when the eye was quiet it slowly settled to the lower portion of the cavity, and remained there in contact with the retina, but the slightest movement of the eyeball caused it to jump about with such rapidity that at first I thought there was more than one. When the head was held forward it would approximate the anterior portion of the cavity, and when the head was thrown backward and held quiet it would settle toward the disc, so that apparently, if there is such a condition as fluid vitreous, this vitreous was evidently in that condition. There certainly was no septa in the vitreous sufficiently strong to support this body. It had no attachment with any other part of the eye, and would rotate in varying directions upon its center, balloon-like, although it generally retained one erect position, seemingly because the dependent portion was a trifle the heavier. It was irregularly spherical, with small indentations, somewhat resembling a potato, and this simile was made still more positive by there being spots and lines of pigment upon the capsule. It had a distinct capsule, which could be clearly made out at the edges by reason of its different refraction, and this capsule was transparent excepting at its pigmented parts. The spots of pigment upon the posterior surface could be distinctly seen through the capsule and contents of the body, and recognized as being posterior to the anterior surface by their different motion or parallax.

The spheroid was itself transparent, or nearly so, and were it not for the delicate boundary line caused by the refraction of the capsule at the edges, and the spots and lines of pigment upon its surface, the body would be invisible. There was nothing white, opaque or fibrous about the body. At first I thought it might be a dead cysticercus; then I thought it might be a filaria, because Kuhnt describes "a sharply contoured glancing white bladder about the size of the optic disc," which was removed and recognized as filaria.

I have examined this patient repeatedly since first seeing him, and I can see no change in the appearance or condition. I have held myself in readiness to remove this body should it show any tendency to cause inflammatory or glaucomatous symptoms, but it is apparently benign, although the presence of the pigment upon its capsule would indicate that at some time there had been inflammatory action. I can offer no suggestion as its origin.

No. 28 West Forty-third St., New York.

REPORT OF SEVEN CASES OF RETINAL SEQUELÆ OF DISEASES AFFECTING UNITED STATES TROOPS IN CUBA AND PORTO RICO.*

BY W. K. ROGERS, M. D.
COLUMBUS, OHIO.

Illustrated.

The following cases came under observation at the writer's clinic at the State Street Dispensary soon after the return of the United States troops from the recent campaign in Cuba and Porto Rico: the first four, through the courtesy of Col. Pope, Surgeon in Chief at the Columbus Barracks, and Drs. Kennedy and Pitcher, of the 17th U. S. Infantry, and Dr. Wilcox, who was at that time on special duty at the Post: one of the remaining three was from this regiment, and came to the Dispensary without being referred: the last two had been in the 4th Ohio and came after being mustered out. All had suffered from some of the various febrile disturbances encountered by the troops during their stay in these countries, and had shared the common experience as to rations, which were so often said to have been in a state of decomposition before becoming available, and together comprise a group which is more interesting than instructive, as the material is presented entirely from a clinical point of view, there being no opportunity to offer any contribution which might help to systematize the rather unsatisfactory state of applied pathology of ophthalmoscopic appearances.

It will be noticed that while the title of this report mentions only retinal lesions, in several instances other structures were involved, and in one the retinal disturbance was probably secondary to a nerve lesion.

Through the kindness of Drs. Kennedy and Pitcher it was possible to keep track of the treatment of the cases which had been sent by them and to obtain some details of the histories of their original illnesses — sufficient to corroborate the statements which they made concerning their nature.

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*Read before Section on Ophthalmology American Medical Association, Columbus, O., June, 1899.

Case I.—Oct. 8, '98, Private H. E., age 20, very dark hair and eyes and swarthy skin, was sent on account of impaired vision of left eye. He had had yellow fever two months before, and had made a fairly prompt recovery. He first noticed the impairment of vision about the time of his return to this country — a month ago.

There had been some pain in this eye, but there was none at this time, and no tenderness during movement nor upon pressure, although, of course, this may formerly have existed. No specific history and no rheumatic nor gouty tendency.

Vision, under mydriatic, O. D. 5/9 + .25 + .50 ax. 75° = 5/5
O. S. 5/100 + .75 + 1. ax .90° = 5/100.

Field, O. D. normal: O. S. red and blue in normal relation, perhaps slightly contracted, white contracted to about 30° in all directions — considerably within the blue area, and somewhat within the red.

Ophthalmoscopic examination showed a normal fundus in the right eye. The left disc corresponded in appearance to the right, but the macula stood out in sharper contrast to the surrounding tissues which were comparatively pale and glistening, having an œdematous appearance which was accentuated by the deeply pigmented back-ground of the fundus in general.

The existence of this œdematous condition of the central portion of the retina was made more positive by its subsequent gradual subsidence under potassium iodide and pilocarpine, to which strychnine was added later, until it was impossible to detect any difference in the fundus of either eye. How much of this change was due to treatment, of course, is problematical. The patient was kept under observation only a week before beginning treatment, and during this time the appearance remained unchanged. It would be impossible to say just when it began to alter, but a decided difference could be noted in three weeks from the time when treatment was begun, and four weeks later subsidence was complete. Vision, however, remained unimproved and the field unchanged when last seen — Dec. 8, '98. It was concluded that there had been a retrobulbar neuritis in addition to the localized œdema of the retina.

During the five months that the patient was under observation several careful blood examinations were made which showed no abnormality in hæmoglobin or corpuscles, and repeated urinalysis was negative.

Case II.—Sergeant W. H. R., age 24. Had irregular intermittent fever in Cuba for three weeks, two months before, and is referred by Dr. Pitcher on account of impaired vision, which has persisted ever since. Patient is about 30 pounds under weight, very pale, skin and mucous membranes having a yellowish hue, and suffers from dyspnœa and palpitation on exertion. There is a rough hæmic murmur over the base of the heart and great vessels. Vision, O. D. 2/60: O. S. 5/24 unimproved. Ophthalmoscopic examination showed, in the right eye, numerous minute glistening white points of retinitis in the macula and surrounding region to the extent of four or five disc-diameters, though not reaching to the disc itself. Farther out toward the temporal periphery these points were accompanied by some pigmentation. In the left eye there were a few similar points about the macula, directly under which was a moderate-sized, crescent-shaped hemorrhage, the upper border of which almost touched the fovea. The general appearance of each fundus and the papillæ was otherwise normal, the slight absence of pigment background being no more marked than was to have been expected in the eyes of a decided blond. Visual fields normal except the scotoma due to the hemorrhage.

Hæmoglobin 42 per cent, red corpuscles, 2,600,000, white 6,000, poikilocytosis fairly marked. Urine negative upon repeated examinations.

The patient was put upon active tonic and alterative treatment, for the most part consisting of protoiodide of mercury one-fourth grain, after meals, or ten grains of potassium iodide before meals, with five to twenty grains of Blaud's mass in conjunction with quinine, arsenic and strychnine, after meals. For three weeks rest in bed was enforced with most careful attention to diet. At the end of this time hæmoglobin had increased to 50 per cent, red cells 2,700,000, white 6,000, with about the same alteration in individual cell appearance as before. A month later hæmoglobin was only 58 per cent, red cells 2,700,000, white 5,000 and poikilocytosis as before. Two months later when last seen hæmoglobin was 60 per cent, red cells 3,000,000, white 9,000. The patient's general appearance was still cachectic, but had improved somewhat, and he had gained about fifteen pounds. Repeated search for plasmodia failed to discover any, and although the constitutional condition had not by any means cleared up, it had been materially benefited, which ought to have been the case with the retinal lesion, at least to a certain extent, if any alteration was to be expected in case of complete restoration to health.

Under this treatment it was impossible to note any improvement in vision or the appearance of either fundus, except the slight difference due to absorption of the hemorrhage, which was so complete that one looking at this eye for the first time would not have been likely to notice a trace of it.

It was impossible to be sure just when the hemorrhage occurred, as it was not so located as to materially interfere with vision already impaired. But from the statements of the patient, who was more than usually intelligent and observant, it seemed probable that it happened a few days before I first saw him. It was ten days before he was put to bed, and it had already begun to absorb. So it is rather difficult to say what influence can be attributed to treatment, even in relation to the hemorrhage. Certainly none at all, so far as vision was concerned.

Case III.—November 20, 1898, Corporal L. L. E., age 34, was referred by Dr. Kennedy on account of recurrent attacks of inflamed chalazia. No constitutional dyscrasia could be established. The patient had had typhoid fever in Cuba about three months before, since when the trouble with his lids had been present most of the time. Impaired vision was not complained of until questioned, when the patient stated that his vision had formerly been exceptionally acute, but that he had been nearly blind for a short time after his fever, especially in the right eye. The impairment developing, as nearly as he could recall, during the last week of fever, becoming rapidly worse and subsiding gradually, but never reaching its former acuteness. He had had no treatment since convalescence from his fever. At the time of examination vision was 5/5 in each eye, with correction of moderate compound hyperopic astigmatism. Under mydriatic each eye showed an apparently normal disc and macula. But in the macular regions, encroaching closely upon the maculæ were a number of sago-like patches in the deeper portion of the retina, becoming much more numerous toward the temporal periphery where they were grouped in thick clusters, which were elevated, and of a reddish-yellow color not very strongly contrasted with the general color of the fundus; some were scantily pigmented and none showed any appearance of atrophy. The patches composing the clusters were fairly uniform in size —seeming in the direct image to be about 3 mm. in diameter—and were more or less globular in shape, not unlike a thin spread of red blood cells, as seen under a high power.

The field in each eye was normal except where broken by the retinal infiltration.

Blood examination showed only slight simple anæmia, and the urine was negative.

Under the most active alterative treatment, combined with iron and other tonics, no change could be observed in the condition of either fundus. In other words, if the form of retinitis observed at this time was what remained of the lesion which had caused the original impairment of vision, then he had recovered practically normal vision without treatment, whereas no apparent impression could be made by treatment upon what remained of a process that presented none of the usual appearances of retinitis that had run its course.

I have alluded to this case as one of Symmetrical Exudative Retinitis, on account of the symmetrical distribution of the agglomerations of exudation. But I am really at a loss for an exact pathological classification.

Case IV.—November 27, 1898, Private S. J., age 28. Sent by Dr. Kennedy on account of impaired vision first noticed a month before. Had typhoid fever about three months before and made a slow recovery, suffering from dysentery, from which he has not yet wholly recovered: is decidedly anæmic and about 40 pounds under weight.

Vision, O. D., 1/60, O. S. 5/60, only slightly improved by correction of hypermetropic astigmatism.

The ophthalmoscope showed in the right eye marked swelling about the disc, the retinal tissue in places obscuring the outlines of the arteries which are not specially tortuous and the veins which showed well marked engorgement. The macular region was bounded by a sharply-defined ring of distinct hyperæmia, enclosing an area slightly less than one disc diameter, of a comparatively pale, yellowish color, in which the macula could be seen as a small, swollen spot of a brighter red than usual. On the whole, such a picture as one might expect in a partial thrombosis of a central vein, although, of course, it is difficult to feel positive about so comparatively rare an affection without more conclusive evidence.

In the left eye there was a similar but less marked œdema about the disc, with venous engorgement and a few striations of opaque radiating fibers in the macular region.

Hæmoglobin 65 per cent, red cells 3,100,000, white in about normal ratio. No alteration in cell appearance. Urine contained a trace of albumen, but no casts.

The patient was put to bed and given as much iron and arsenic as he could take, and such alterative treatment as he would tolerate. Iodides had to be almost wholly discarded. Corrosive sublimate was fairly well borne. It was three weeks before the dysentery was checked and at the end of this time no material alteration in the patient's vision or retinal condition had taken place. I did not see him again for three months, during which time he had kept up the use of the iron as formerly prescribed, but practically nothing else.

He had gained about twenty-five pounds in weight, hæmoglobin was 85 per cent, and red cells 4,250,000. Urinalysis negative. Vision O. D. 5/25, O. S. 5/18 with correction, having at first been O. D. 1/60, O. S. 5/60. The œdema had disappeared from each fundus, but there remained in each macular region a few opaque radiating fibers, as seen at first in the left eye. These have persisted to the present time. Treatment has been continued with the addition of alteratives which have recently been better tolerated.

The patient has regained his usual weight, and blood count is now normal.

Case V.—December 1, 1898, Private E. E. S., age 22, came on account of accommodative asthenopia, stating that vision had been considerably impaired shortly after recovery from yellow fever four months before. Convalescence had been slow, and complicated by some irregular febrile disturbance with occasional rigors—presumably malarial, as there was no source of sepsis. With returning health the vision had improved so that now it only causes annoyance when the patient attempts to read. He is now in usual health and shows no appearance of former illness. No history of syphilis. Blood count is normal and urinalysis negative.

Vision under atropine, O. D. $5/15 + .25 + .5$ ax $70^\circ = 5/6$
O. S. $5/12 + .75$ ax $90^\circ = 5/6$

Visual fields apparantly normal.

In the temporal region of each retina are a few proliferative striæ adjacent to small vessels, showing a whitish reflex, and extending into the vitreous from 1 to 6 D. In one place in the right eye the proliferation crosses a small arterial branch and obliterates it beyond this point. In the left eye there are a few wavy opacities in the vitreous. There have obviously been hemorrhages which have cleared up.

Nothing was done in this case except to correct the error of refraction. He was seen three months later, and was entirely comfortable. Vision with correction 5/5 in each eye, and no perceptible alteration in the appearance of either fundus. It had been intended to keep the patient under observation more closely, but being unconscious of any difficulty he failed to report either to me or the post surgeon, and only returned for a copy of his formula for glasses, thus affording an opportunity for the second examination.

Case VI.—February 3, 1899. W. J., age 31, had been a private in the Fourth United States Volunteer Infantry and came to the dispensary

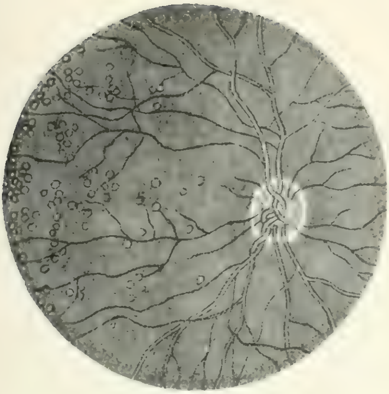

FIG. I.

FIG. I.—CASE 3, RIGHT EYE. Symmetrical Exudative Retinitis, following typhoid fever; the distribution of clusters of almost uniform disclike exudations containing occasional specks of scanty pigmentation, being practically identical in both eyes. The drawing shows the fundus as first observed, after vision had returned to nearly normal, and as it still appears.

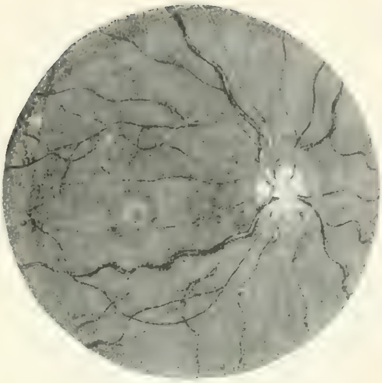

FIG. II.

FIG. II.—CASE 4, RIGHT EYE. Partial Thrombosis of Central Retinal Vein, following typhoid fever and dysentery; tumefaction of entire fundus, especially about the disc and macula, which latter showed as a deep red spot separated by a dull ring from a paler red areola. The veins were engorged, but there were no hemorrhages; the arteries were perhaps slightly attenuated; many vessels partially or wholly submerged. The condition was similar but less marked in the fellow eye. The drawing shows the appearance three months after illness. Two months later nothing remained but a few opaque radiating fibers which had appeared meanwhile.

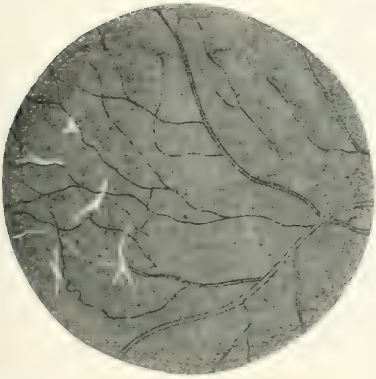

FIG. III.

FIG. III.—CASE 5, RIGHT EYE. Proliferative Retinitis, of hemorrhagic origin, following yellow fever; the proliferations lie along small arterial branches for the most part, and extend from 1, to 6. D, into the vitreous. At one point a proliferation crosses a small branch and obliterates it beyond. The condition of the fellow eye was similar, with a few vitreous opacities. The drawing shows appearance four months after illness.

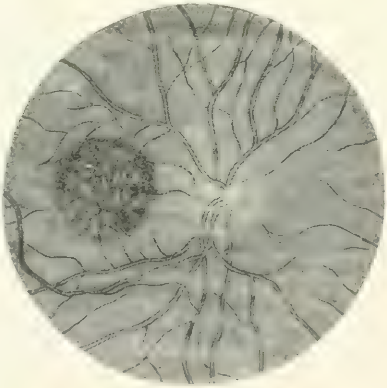

FIG. IV*a*.

FIG. IV*a*.—CASE 6, RIGHT EYE. Central Retinitis with adjacent exudation. The drawing represents condition as first seen, six months after an attack of intermittent fever. The irregular arrangement of the network of striations in the central area of inflammation suggests that the exudation may have accompanied connective tissue structure in the retina, especially as it persisted, and become even more pronounced as seen in Fig. IV*b* two months later.

The patches of adjacent exudation showed nothing of special interest, and are only vaguely shown.

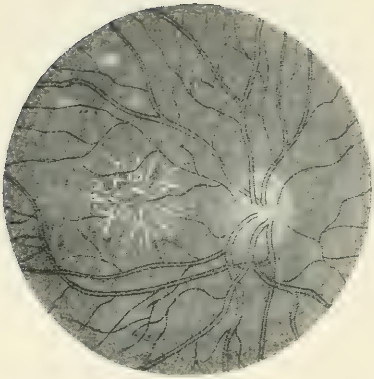

FIG. IV*b*.

[The wavy appearance is due to defective mounting of drawing.]

FIG. IV*b*.—CASE 6. RIGHT EYE. Showing changes in Fig. IV*a* after two months.

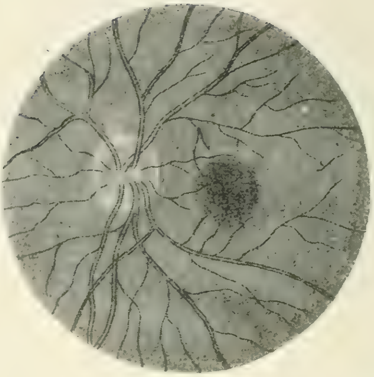

FIG. V*a*.

FIG. V*a*.—CASE 6. LEFT EYE. Condition at time of that shown in Fig. IV*a*. The dark granular area occupied the macular region, and is shown somewhat too close to the disc. The illustration is suggestive of hemorrhage, but as seen with the color of the fundus this was not the case.

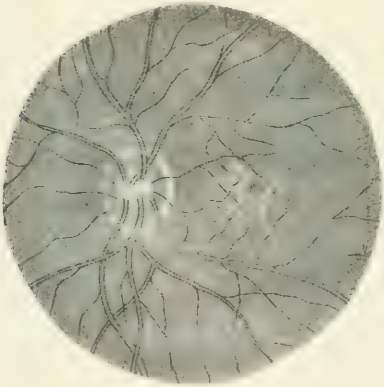

FIG. V*b*.

FIG. V*b*.—CASE 6. LEFT EYE. Same as Fig. V*a*, two months later. The dark granular area has undergone the same changes as in the right eye, and seems to show that the appearance of the net-work of fibrillar exudation was a secondary process, as it had not occurred in this eye at a time when it was quite marked in the other (see Figs. IV and V*a*), which would be a further indication that it was a connective tissue process.

after having been mustered out, on account of impaired vision, and inability to use his eyes without considerable pain. Had had malarial fever in Porto Rico six months before, which was at first distinctly tertian but later became irregular. The patient stated that he had had two hemorrhages from the bowels during his illness, and that upon several occasions the stomach contents, which had been vomited, had contained dark coffee-ground material. Nothing of this kind had occurred during the past four months. No history of syphilis.

The exact time when impairment of vision began could not be determined. It may have been at any time within the past six months, but was noticed decidedly a month ago and does not seem to be materially worse.

At present anæmia is marked and there is slight jaundice. Blood examination shows hæmoglobin 60%, red cells, 2,600,000; white, 12,000; without alteration in appearance except a few microcytes and megalocytes. There is a distinct hæmic murmur over the base of the heart and great vessels.

Vision O. D. 5/40, O. S. 5/15, unimproved. Mydriatic showed a slight compound hypermetropic astigmatism, the correction of which did not improve vision.

The ophthalmoscope showed a dark granular area about two disc-diameters in extent in the right macular region, and another perhaps one third this size in the left, throughout which was a fine net-like, yellowish exudation. In the right eye beyond this, to the temporal side, and somewhat upward, having no special relation to blood vessels, were three moderate-sized patches of exudation, in one of which a little pigment had been deposited. These patches were in the deeper layers of the retina.

No examination of the urine was made, as the patient was referred to the medical department, but failed to comply with instructions. Some doubt as to his ultimate destiny, it seems, had been engendered by the rather complex examination which had overtaken him, when all that he wanted was a pair of spectacles, which appeared to be the only thing he couldn't have. His faith revived somewhat, in the course of the next ten days, and he began to use the protoiodide of mercury, iron, quinine, strychnine and arsenic with which he had been provided—unfortunately by prescription—with such zeal that he returned two months later badly salivated, and wondering what would happen next. The error of his way was pointed out to him, and he submitted to another overhauling from which it developed that his vision was O. D. 5/20, O. S. 5/10.

Hæmoglobin 80 per cent, red cells 4,100,000, white 9,000, microcytes and megalocytes absent, urine normal, and only a trace of the former hæmic murmur. The ophthalmoscope showed no apparent change in either fundus, to account for the slight improvement of vision. On the contrary a few central opaque nerve fibers could be made out which before were not present.

His faith in doctors however seems to have been definitely and permanently shaken by the discovery of the cause of the condition of his mouth, for notwithstanding that he obtained the coveted spectacles, he disappeared with his mouth wash, etc., and has not since been seen.

Case VII.—February 6, 1899. B. F. T., age 27, was a private in the Fourth United States Volunteer Infantry, and came to the dispensary on account of impaired vision in one eye. Had dysentery in Porto Rico six months before, for four weeks, and at the same time some febrile disturbance which had been pronounced malarial. There were no chills however. The patient was ten or fifteen pounds under weight, but not distinctly anæmic. Blood examination showed hæmoglobin 85 per cent, red cells, 4,850,000; white cells in normal ratio, no alteration in appearance. Urine normal. Stated positively that he had never had any trouble with his eyes until the present attack which began about six weeks after his illness, and has been growing steadily worse, and asserted that when his vision was tested at the time he enlisted both eyes were alike. He gave a history of chancre eighteen months before, for which he had received local and constitutional treatment for not longer than a month; there had been no eruption. It is possible that on account of this history this case should be excluded from the present report, especially in view of the result, which is in gratifying contrast to the cases just recorded. But the impairment followed so promptly after his severe illness that while there is little doubt that the retinal lesion was in part specific, it is not certain that the depletion induced by illness had no part in its etiology.

Upon examination of the eyes vision was found to be O. D. 5/5, O. S. 2/100; under mydriatic O. D. 5/6+ .25 sph. = 5/5
O. S. 2/100 unimproved.

Ophthalmoscope, O. D. negative. O. S. well marked papillitis, with œdema of surrounding retina extending beyond the macular region, a few deep circular hemorrhages in this neighborhood, and numerous small and moderately large patches of dull whitish exudation, with occasional thick deposits of pigment in their substance and about their edges.

The patient was put on mixed treatment and iodide pushed to six drachms a day, for a time. Rest in bed could not be secured, but was approximated as nearly as possible.

In ten days the inflammation of the disc could be seen to be subsiding and vision was 5/100. In five weeks œdema had largely disappeared; vision 5/30. In eight weeks there was scarcely any trace of hemorrhages, œdema had disappeared, there was some tortuosity of vessels and retinal exudation seemed little if any changed, except perhaps some increase in pigmentation. Vision 5/12. The case is still under observation and treatment.

Among the foregoing patients there were two cases of yellow fever, two of typhoid fever, four of some form of malarial fever, and two of dysentery. Marked anæmia occurred in three cases — one where malarial fever was followed by dysentery and two where malarial fever was uncomplicated. In one case a syphilitic patient had malarial fever and dysentery, and in one case yellow fever was followed by some form of malarial fever. The term malarial fever is made use of, although its vagueness is offensive, because in all the cases to which it is applied the symptoms and phenomena were not sufficiently typical to admit of a more definite classification except in one instance, and yet there seemed to be no other explanation of the disorders to which it is applied.

The existence of anæmia has been cited as an etiological factor in three cases. But it must be borne in mind that all of these cases came under observation some time after the original illness had occurred, and it is more or less certain that if all were not actually anæmic they were in a condition of materially depleted vitality. But anæmia was the only dyscrasia that could be established, except in the one case of syphilis. In only one case — that of typhoid fever, in which a symmetrical infiltration of the retinal tissues by almost uniform globular masses occurred — did the appearance of the lesion suggest that it might have been in some way directly associated with the disease during which it occurred.

A decided tendency to involvement of the vascular system will be noticed in these cases — five out of the seven showing evidences of this tendency by retinal extravasations, and one of the remaining two having had gastro-intestinal hemorrhages. This, of course, may only be a coincidence, but in the absence of histological evidence it may be fair to consider that probably the structural changes in the retina were in most of them directly due to degenerative vascular conditions, being acute because abruptly precipitated by an acute illness. However this may be the practical result of treatment seems to show that when the lesion dependent upon the diseases mentioned gets beyond the vessels and produces any definite structural changes in retinal tissues, just to that extent it is beyond the reach of medication, no matter how acute the process may be, and no matter how closely associated with constitutional conditions which may in themselves be remediable.

This, I believe, is somewhat in contrast with processes dependent upon vascular changes due to other conditions. In nephritic retinitis, not only have hemorrhages absorbed, but exudations have cleared. In those changes due to uric acid diathesis, although complete absorption of deposits have not, so far as I know been noted, still, visible alterations have been traceable to treatment. In diabetic retinitis the appearances of the retina may vary with treatment. In syphilitic exudations a very marked effect may be produced by treatment, even to complete absorption, where the process is recent and not extensive. And this may have been the explanation of the improvement occurring in the last case of this series—the only one in which any material improvement could be attributed to treatment beyond the absorption of hemorrhages, and the subsidence of vascular disturbances and conditions directly dependent upon impaired functions of blood vessels.

If this be so, it is the more interesting as the disturbances in the cases here reported were preceded by acute processes, while those alluded to in contrast, are dependent upon chronic conditions.

It is to be assumed, then, that a lesion resulting from an acute cause is, in general terms, less apt to be influenced by treatment, than one resulting from a chronic cause.

These cases are not sufficiently numerous to suggest any satisfactory deductions as to the relative frequency of lesions or secondary conditions to primary diseases. And it is doubtful if even a more extensive list would furnish any adequate basis for conclusions in this respect. There is one feature, however, which all of these cases possessed in common — namely, malnutrition, in greater or less degree, due not only to disease, but also to the unsatisfactory nature of such food as could be supplied to them; and one feature which applied to the changes seen in the eyes of all but two of them — more or less extensive vascular changes.

That anæmia alone played any very important rôle as a cause of vascular changes visible in the fundus of these eyes, may be doubted from the fact that although profound in one case, it did not, in any, compare with the degree of depletion reported, for instance, by Dr. Oliver, in his interesting series of cases of lesions due to chlorosis, etc.

Of course a much larger amount of evidence must be accumulated before it will justify any general conclusions. But from such examination as could be made, and such facts as could be elicited in these cases it seems not improbable that the defective character of their food is quite as much responsible for the lesions seen in the eyes, as the diseases already referred to.

MALIGNANT NEOPLASMS OF THE EYE.*

BY JOHN O. McREYNOLDS, B.S., M.D.,
DALLAS, TEXAS.

The subject of maligant neoplasms of the eye is too broad and comprehensive for my limited time, and still more limited resources, and I will ask permission simply to present a few cases illustrating some of the most important forms of ocular growths that tend to a fatal issue.

1. *Melano-sarcoma of the Choroid.*—Miss I. W., 18 years old and in good general health, consulted me with reference to a gradual loss of vision in her left eye, the scotoma corresponding to the upper and inner portion of the visual field. There was no pain or discomfort, the tension was normal, the pupil only slightly dilated, and only a moderate degree of congestion of the anterior ciliary veins in the lower and outer segment of the globe. With free mydriasis, we could easily discern both by ophthalmoscopic examination and by oblique illumination a very distinct spherical tumor about the size of a hazel-nut and of a somewhat mottled slate-colored hue, and situated for the most part a little anterior to the equator in the lower and outer region of the fundus. As the patient had already been under the observation of an oculist for several months, I did not feel like resorting to enucleation without a careful investigation of the case. Accordingly, I introduced a hypodermic needle in the subretinal space just posterior to the tumor and drew off a few drops of a translucent fluid which showed on microscopic examination no important solid elements except white blood corpuscles. But the withdrawal of this fluid did not diminish the size of the tumor, which indicated by its resistance to the needle and its general contour that it was solid I then advised and performed an enucleation, made a frozen section of the globe right through the tumor, which you easily see in this macroscopic specimen is distinctly malamotic and surrounded by an area of detached retina. The microscopic examination reveals spindle celled sarcoma of the melanotic variety.

And now, after a lapse of several months, there is no evidence of recur-

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*Read before *The State Medical Association* at San Antonio, Texas, April, 1899.

rence *in loco* or of matastasis in remote organs, and if there should be no future development of this growth, we would feel justified in saying that a timely operation had beyond any question rescued a young woman from a most horrible death that would otherwise have been inevitable.

2. *Epithelioma of the Eye.*—Mr. S. C., — years of age, of Texas, consulted me with regard to his eye, concerning which he gave the following history. Several years ago a small area of thickening and subsequent ulceration developed on the outer portion of the lower lid. This was treated at different times with various caustic remedies, but the disease continued to extend until finally a quack cancer doctor resorted to the strange expedient of injecting some very intensely escharotic substance into the cellular tissues between the eyeball and the outer wall of the orbit. This procedure resulted in such a violent inflammation that the eyeball was totally lost and its shrunken remains became firmly adherent to the upper lid and to the periosteum of the external angular process of the frontal bone. When I first saw the patient, the extensive and characteristic involvement of the tissues rendered the diagnosis of epithelioma perfectly positive. And the only question of real difficulty was, would an operation improve his condition? I felt that the question should be answered in the affirmative, for three reasons: first, because the advancing ulceration, and the incarcerated painful blind eye coöperated to render the life of the patient one of continual suffering; second, because the condition of the blind eye was such that there was the established danger of producing sympathetic involvement of the remaining useful eye; third, because there was a prospect of so completely removing the diseased structures as to prolong indefinitely the life of the patient. So prompted by this conviction, the operation was made, removing completely both eyelids, the eyeball, a considerable quantity of the post ocular orbital contents, and a part of the periosteum and bone of the outer wall of the orbit, and the adjacent portion of skin from the temporal region. The edges of the wound were then dissected up and brought together as well as possible and the usual surgical principles applied. The wound has healed well and complete comfort has been secured since the operation, about two months ago, the good eye has been placed in the safest possible condition, but the time elapsed has been too short to speak with certainty concerning the question of recurrence.

3. *Glio-sarcoma of the Retina.*—B. G., 2 years of age, was brought to me by his father from Jacksboro, Texas, and he gave the following history: When only a few months old a light reflex was discovered in the pupil of the left eye and the diagnosis of a cataract was made and delay

was advised. Later on an oculist made a diagnosis of hydrophthalmos and instillations of eserine were prescribed, although the growth at that time had forced its way through the anterior portions of the sclera of the left eye and the neoplasm in the other eye was clearly discernible as a light-colored tumor within the globe. The vision was totally lost in each eye and the pupils were dilated, but the tension was very little affected in the right eye and only slightly elevated in the left eye. The right eye was perfectly quiet and comfortable, but the left eye was somewhat injected and painful. I informed the parent of the serious nature of the malady and expressed the conviction that it was too late to accomplish anything more than temporary relief from the suffering and possible prolongation of life. Accordingly the left eye was enucleated with the result of securing complete comfort for the child for two months, when the right eye became very suddenly inflamed. This was a result of a morbid growth within, producing a very violent glaucoma with such extreme chemosis that the conjunctiva protruded far beyond the palpebral fissure and had to be held aside in order to reveal the cornea. So the right eye also was enucleated with the result of securing perfect rest for the patient for several weeks, when tumors appeared in the orbit of the left eye. These were removed, and no more tumors ever appeared in either orbit. I present to you the macroscopic sections of the enucleated eyes showing the glio-sarcoma within the globe. But after several weeks, a series of tumors began to appear in different parts of the head, but especially along the sutures connecting the frontal and parietal bones. These gradually increased in number and in size, cerebral symptoms developed, the feeble flame of life grew fainter, and the little child passed softly on into that deeper slumber, where all material eyes sleep forever. It may have been that an early recognition of the true nature of his trouble would have rescued the little fellow from his early grave, but such a life in this world would have had few charms to offer, and we hope that he now sees further than we can see into the divine volume of vision, into the strange and varied forms of disease, and the deep and undiscovered mysteries of life.

EYES OF SCHOOL CHILDREN.—Milliken pleads for the utilization of the oral method of teaching to a larger extent than is now practiced, especially in the earlier years of school-life. The greater use of the blackboard with lectures, thus avoiding close eye application, would prevent much mischief in the future life of the pupils who suffer from any degree of ocular defect. He insists on the need of the earliest possible discovery of any existing ocular weakness in school children.—*Toledo Medical and Surgical Reporter.*

REPORT OF A CASE OF TOXIC AMBLYOPIA, ILLUSTRATING THE IMPORTANCE OF DETECTING THIS DISEASE IN ALL CASES WHERE RAILROAD EMPLOYEES ARE AFFECTED.*

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Illustrated.

During the past year the writer has met with numerous cases of this disease; some of them were among railroad employees, who either came to be tested for color blindness, or who thought that their eyes were failing from refractive errors, which needed correction with glasses. Some of these cases were among soldiers, or rather pensioners, who were applicants for increase in rating, basing their claims upon alleged defects of eyesight due to other causes. A few cases appeared among private patients, notably one, a tobacco merchant, who was smoking thirty cigars a day, two of them among traveling men, whose habits of living were irregular, and in whom the sudden unsatisfactory condition of the eyesight caused them to seek advice. Some of these cases presented no visible ophthalmoscopic changes; others gave well pronounced pallor of the nerve head on the side next to the macula lutea, either with or without refractive errors, and some cases were observed where there was present amblyopia exanopsia in one eye, with demonstrable appearances in the nerve head, either with or without squint. A few cases were observed among women, which resembled in many respects this disease, which had to be excluded from the tobacco list, because of the rarity with which this sex in our country becomes addicted to this vice. The writer is well convinced that this disease is far more prevalent than has been heretofore held, and that functional disturbances of vision, in one or both eyes, due to the introduction of drugs and other poisonous agents into the general circulation, occurs frequently, and in both sexes. A large per cent of these cases may be found among railroad employees and traveling men; people who lose much sleep, who live with great irregularity, both as regards sleep and diet, who consequently smoke much, and who though not as a class may be said to be excessive drinkers, still many of them find occasion to imbibe more or less regularly, and especially when hungry before meals, or early in the morning, times when the conditions are such that the spiritous toxicity finds most ready entrance, and makes the most lasting impression upon the central nervous system. Among women the writer has observed that as a rule they were heavy coffee drinkers. It is highly probable that the excessive use of coffee and tea, the habitual taking of drugs of one kind and another by women, e. g. bromides, bromo-caffeine, phenacetine, and other coal tar derivatives, small but more or less regular doses of spirits, taken by those who claim never to touch it (only as medicine, etc.), will in some cases be found responsible for functionally disturbed visual acuity, particularly where the affection is bilateral, and where sometimes the diagnosis has been set down as hysterical amblyopia. Women as a rule take far more medicine than men. They suffer more from constipation; they bathe as a rule less often than men; they have more imperfect kidney elimination, and they are without doubt fully as prone to toxicity as men.

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*Read before the Mitchell District Medical Society at West Baden, June 22d, 1899.

Besides this we have a certain per cent of cases of choked disk, traceable directly or indirectly to menstrual disorders, and the border line between those cases of mere toxicity, resulting in functional, or evanescent disturbances to vision, and those which become distinctly inflammatory in character from meningeal and basilar changes which accompany the total suppression of this function, will probably never be satisfactorily explained. The two great toxic agents — whisky and tobacco — substances which produce at all times more or less disturbance in the general bodily circulation, have been accredited with this eye malady, either alone or combined; but many other agents have been found to produce like conditions, temporarily or even permanently; and our best observers, among whom may be mentioned Casey A. Wood, Sachs, De Schweinitz, Knapp, have met with cases plainly attributable to other drugs, e. g., lead in painters, stramonium, which is found in asthma cigarettes, quinine in excessive doses, opium, etc. It is highly probable that certain elements, existing in the system under certain depraved conditions, where autointoxication may be said to exist, as in diabetes, as well as certain chemical combinations occurring in the stomach under anomalous conditions, either alone or combined with the elements of wornout tissue waste, have been known to bring about disturbances in the visual fields, together with optic nerve changes, characteristic of this disease, in either the acute or chronic form.

The usual course of this disease is a return to more or less complete recovery; that is, whenever the toxic element, whatever that be, is completely removed from the system; provided, however, that structural changes in the optic nerve itself have not gone too far. Atrophy and sclerosis of the interstitial connective tissue, having once taken place, the improvement will be slight. But those patients who have had good vision before an acute attack will, as a rule, recover.

The following case, taken from the case book of the writer, is interesting, as an illustration more or less typical of this disease:

Mr. B., age 39; passenger engineer of apparently good health; somewhat over weight, but otherwise no complaints, except as to his eyes. He has been in the employ of one of the railroads leading out of Indianapolis, and has been on regular duty for about fourteen years. Up to this time he has never been troubled with his eyes. Some four or five years ago he began the use of spectacles to read with; but his distant vision, and his ability to determine colors have always been superb until lately.

For several months he has noticed unsatisfactory periods of blurring, at which times he has thought that his glasses were not right. Quite lately he has not been able to read the newspapers. He sees better out doors in cloudy weather. The atmosphere has for him an indescribable haziness. His sleep and meals are irregular. He is a very moderate drinker; thinks that he was never drunk. He smokes a pipe almost constantly during his hours of duty, and at other times he smokes cigars. Ten cigars daily is a small average for him, sometimes he smokes fifteen.

His vision is 20/60, and apparently but little helped with Sph.+1.00D. He has presbyopic glasses, Sph.+2.50D. In attempting to read he is observed to hold his eyes askance, first turning one side of his face then the other toward the page, or shift his seat nearer toward the window, but without much improvement in the way of satisfactory illumination. He describes the lines as hazy, and the letters as overlapping each other in such a way as to make the words coalesce, or run together. Additional plus correction avails little if any.

The ophthalmoscope reveals no unusual disturbance in the retinæ, but the optic papillæ are somewhat paler than natural on the side

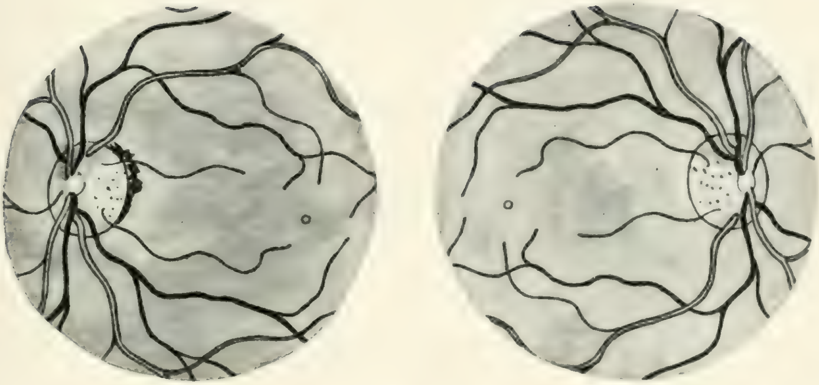

FIG. 1.

Pallor of Optic Nerves in Tobacco Blindness,

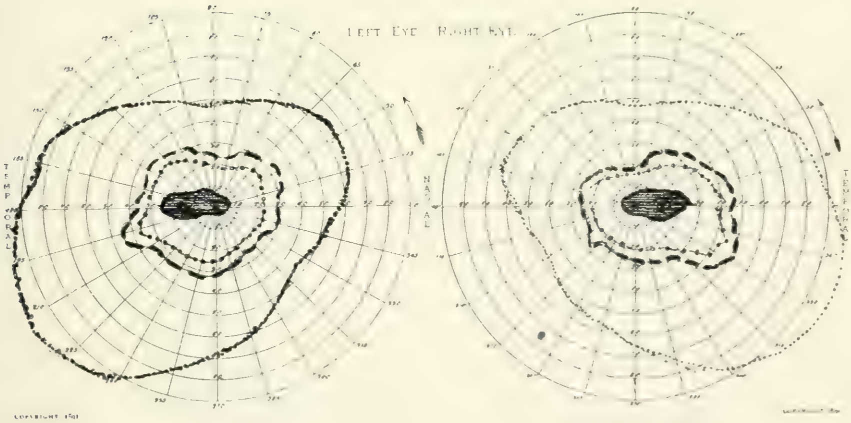

FIG. 2

White . . . .
Red . - - - - - - -
Blue o o o-o-o-o-o
Scotoma for colors ▬

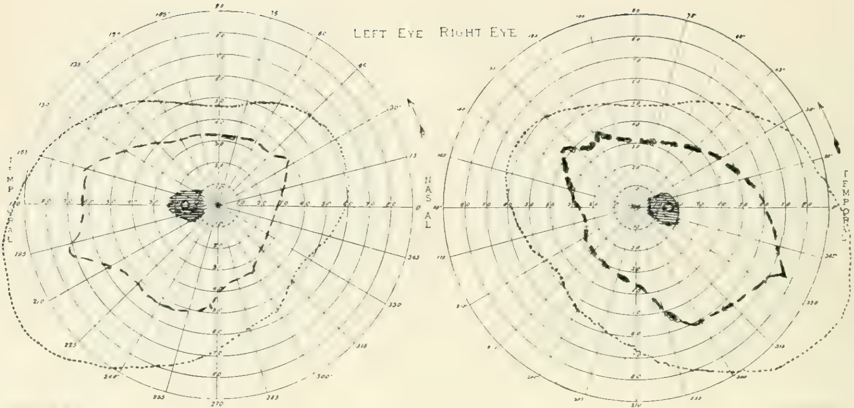

FIG. 3.

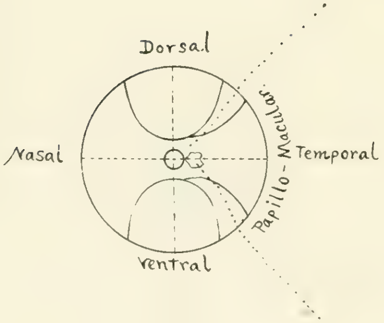

FIG. 4.

Subdivision of Optic Nerve Fibers at its entrance. (*Wilbrand.*)
Norris & Oliver, Vol. II.

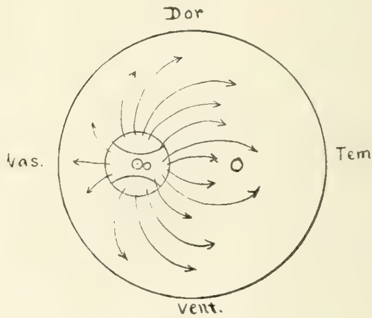

FIG. 5.

Diagramatic representation of Retina, showing distribution of Optic Nerve Fibers after leaving nerve head. (*Wilbrand.*)
Norris & Oliver, Vol. II.

next to the maculæ, and the trabeculæ of the nerve heads show plainer at this point than in the other parts of the disks. Small physiological excavations may be seen around the entrance of the vessels in both disks, and in the right some pigmentation bounds the upper limbus. (See Fig. 1.)

Both fields of vision show the characteristic contraction of the color areas for red and for blue. (See Fig. 2.) Besides this there is a central oval-shaped scotoma, or blind area for all colors, reaching 6 or 8 degrees inwards from the fixation point, and about 20 to 25 degrees outwards, with a vertical area of 8 degrees. The blind spot of Mariotte is included within this scotoma. The fields were tested with small colored squares, 5mm. in diam., the ability to distinguish larger colored objects on the face of the perimeter not being determined. The white field was comparatively in good condition, while the red field was contracted all around from 8 to 15 degrees, and the green and blue even more. Upon allowing the patient to breathe the fumes of amyl nitrite, there was a temporary improvement in the visual acuity, which raised from 20/60 to 20/50 +.

This patient was advised at once to discontinue the use of tobacco, and to take two Turkish baths per week. Hypodermic injections of pilocarpin, and the internal administration of salines, together with temporary use of dark coquilles, to be worn during the day time, constituted the treatment. The case made an uneventful recovery. I append a second reading of his visual fields (See Fig. 3,) showing the increase in area of his color fields, and a corresponding decrease in the size of the central scotomas, which finally were almost limited to the blind spot of Mariotte, while the fixation point became clear.

The importance of detecting ring blindness early, when the person so affected happens to be a railroad employee, can hardly be overestimated; especially may this be said of engineers and firemen. Such a man can be the source of the gravest accidents, which will cost in a moment many lives and much property; for whenever he is on the lookout for a station crossing, or signal known to him, he may be able to recognize the lights as they come into view; also in odd places where he thinks he is likely to meet specials, he may get along without making mistakes; but in some unusual out-of-the-way place, or at some unexpected time, possibly during a fast run, if a test signal be thrown out, he will not see it until within such close range that he may even pass it before he can sound brakes.

This man will be able to pick out the skeins, and match colors in the examination for color blindness; but if his fields be tested with the perimeter, the examination will reveal (1), a shrinkage of the fields for color, or (2), the presence of a more or less well defined blind spot, or central scotoma, for red and for green, while the field for white may remain normal, or nearly so; consequently the extreme limits of his retinal perception, as well as the exact centers, will be defective, leaving the intermediate portions only available for color vision.

The following points may be considered by way of conclusion, as the summary of our present knowledge on this subject:

1. This disease is more prevalent than it was formerly supposed to be.

2. It is to be found among people holding positions of trust and great responsibility, where human life depends upon accurate and quick eyesight as well as judgment; any tardiness therefore in the visual act, any hesitancy, or lack of decision, may result disastrously both to life and property.

3. This disease is to be considered curable; it differs in this respect from true color blindness or Daltonism; it frequently appears in people whose eyesight has formerly been fairly perfect. It may also appear in people who are color blind.

4. It is more usual among men than women, for obvious reasons; the eyesight of men is more frequently brought into question as a mere matter of responsibility to others.

5. It is due largely to the tobacco habit, to mental and bodily fatigue, which renders the individual more susceptible to the influence of stimulants and narcotics, taken often to counteract the effects of irregular sleep and irregular diet.

6. When neglected it becomes chronic and incurable.

7. While tobacco and whisky probably hold first place as agents in its causation, it may arise from other sources, or be due to complex conditions existing in the system giving rise to auto-intoxication.

S. E. Cor. Penn. and Mich. Sts.

THE REFRACTION OF TRACHOMATOUS EYES.

E. E. HAMILTON, M.D.,
WICHITA, KAN.

In January, 1896,* I reported the result of an examination of the refractive condition of 190 trachomatous eyes. Many defects, both axial and curvature, were found, which might very properly be styled asthenopic errors. Their presence, uncorrected in healthy eyes, would cause some uncomfortable symptoms of strain and prompt their possessor to seek relief.

Since then the pendulum of ocular sentiment has swung still further in the direction of emmetropia until slight defects, particularly curvature, are recognized as fruitful sources of discomfort. The emmetropic eye is considered the ideal eye, the one best meeting the demands of modern civilization with least danger of discomfort or damage. Its refractive condition is seldom changed and its functions seldom perverted if its environments are at all favorable. Unfortunately it is the rare eye, compared with the hypermetropic and astigmatic one.

It is with a view of comparing the diseased trachomatous eye with the eye having no recognizable pathological changes that I have pursued this investigation further. Evidently a healthy eye needing a correction of refractive errors will need it still more in the presence of organic changes, be they intra or extra ocular. Acting under this conviction, it is my practice, as early in the disease as conditions permit, to work out carefully the refractive condition, calling to my aid the ophthalmometer, shadow test, and, when thought necessary, a cyclophlegic.

As will be seen, many errors have been discovered, the correction of which, it has seemed to me, has placed the eyes in a condition best responding to treatment, besides lessening the liability of aggravating and dangerous relapses so common in this disease.

Errors of refraction invite contagious troubles in that they furnish a soil more favorable to germ development. Conjunctival congestion, so frequent an attendant of ocular defects, lessens tissue resistance and predisposes to the disease.

Since January, 1896, I have examined 125 trachoma cases, representing 230 eyes, 20 of the number having for practical purposes one eye only. Eighty-five of these cases have been under treatment for the disease, while 40 were pension applicants who were seen but once.

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*See OPHTHALMIC RECORD.

Of the 230 eyes 200 (or 87%) were hypermetropic in both meridians, or hypermetropic in one meridian and emmetropic in the other (25 cases of simple hypermetropia, 66 cases of simple hypermetropic astigmatism and 109 cases of comp. hypermetropic astigmatism), 4 (or 1 7/10%) had mixed astigmatism, 23 (or 10%) were myopic in both or myopic in one meridian and emmetropic in the other. (11 cases of simp. myopia, 8 of simp. myop. astig. and 4 of comp. myop. astig.)

One hundred and ninety-five (or 84%) were astigmatic. Of these 30 (or 15 4/10) had oblique axes (145° or 35°), 92 (or 47 2/10%) had axes with or approximating the rule, while 73 (or 37 4/10%) were against or approximating against the rule.

Seventy-six cases had binocular astigmatism, 42 having symmetrical and 34 unsymmetrical axes.

Of the 34 having unsymmetrical axes 15 required cylinders vertically placed in one eye and obliquely in the other; 6 had horizontal axes, their fellows being oblique; 4 had oblique and parallel axes; 8 had oblique axes not parallel, while one had a vertical axis, its fellow being horizontal.

Thirteen of my cases required glasses differently ground for each eye as follows:—

Two had simp. hypermetropia in one eye and simple hyper. astig. in the other; one had simp. hyper. in one and comp. hyper. astig. in the other; four had simp. hyper. astig. in one and comp. hyper. astig. in the other; one had simp. myop. in one and simp. hyper. astig. in the other; one had simp. myop. astig. in one and comp. myop. astig. in the other; one had simp. myop. astig. in one and simp. hyper. astig. in the other; while one had mixed astig. in one and comp. hyper. astig. in the other.

The 40 old soldiers had 72 eyes, 8 of the number having only one eye of practical use. Of the 72 eyes 51 were astigmatic, 4 myopic, 14 hypermetropic and 3 emmetropic. Of the astigmatic cases 15 7/10% had oblique (135° or 45°) axes, 41 1/10% were against and 43 2/10% were with the rule. Twenty-two cases had binocular astigmatism, 15 having symmetrical and 7 unsymmetrical axes.

These cases represented the disease in all its stages. In practice a smaller percentage, in the stage of sequelæ, is constantly seen. Patients evidently are becoming educated to the necessity of early treatment. On the contrary, the pension applicants, dating in most cases from army life represented comparatively more of serious organic changes.

Obviously many difficulties were found in examinations and corresponding uncertainties as to exact measurements of errors. Corneal opacities of different location and density were found. Old ulcerations and cicatrices had caused many irregularities of corneal curvature, manifested mainly by distorted mire images. Iritic complications were seen as well as deeper structural changes.

Notwithstanding these many difficulties, I am persuaded fairly accurate results were obtained, existing conditions considered. They speak or themselves and need no comment.

Doubtless some of the curvature defects were acquired, the primary cause, in my opinion, being diminished corneal resistance, influenced secondarily by external and internal pressure.

If disease has weakened the vertical meridian its curvature will be increased and lid pressure will aid in the result. If the horizontal meridian be weakened its curvature will be increased. Possibly here the lateral rectis aid in the result.

The unusual frequency of astigmatism against the rule, seemingly increasing as the disease advances, suggests weakening of the horizontal corneal meridian—enough to more than counteract the opposite effects of increased lid pressure.

If astigmatism against the rule does occur with comparative more frequency in trachomatous than healthy eye, can we account for it clinically? How often is seen at the border of a sharply-defined pannus, stopping at or short of the horizontal meridian, an infiltration. This tends to assume a comparatively linear shape, and disposes itself in a (or approximating) horizontal direction. Sometimes we find extensive destruction of corneal tissue, but oftener an exudate, which may break down forming superficial ulcers, involving perhaps the epithelial layer only. Possibly this disposition to a linear horizontal infiltration may tend to weaken this corneal meridian, causing increased curvature horizontally and diminished curvature vertically.

It would be interesting to know how stable are these acquired curvature effects. Does relieving lid pressure diminish acquired astigmatism with the rule? Does the absorption of exudates, healing of corneal ulcers and subsequent contraction of cicatrices lessen acquired errors, resulting from diminished corneal resistance? I am unable to answer from individual experience. Others having better opportunities for observing these cases answer in the affirmative.

EXCISION OF THE SUPERIOR CERVICAL SYMPATHETIC GANGLION FOR GLAUCOMA, WITH A REPORT OF A CASE.

BY GEO. F. SUKER, M.D.,

TOLEDO, OHIO.

This, if the writer is not seriously mistaken, is one of a very few such operations ever performed in the United States. For this reason alone, if for none other, the case merits a report.

Dr. James M. Ball, of St. Louis, Mo., was the first to perform the operation in America, and a full account of it is to be found in the *New York Medical Journal* of July 1, 1899.

Though the operation has not been done more than fifteen times, the results have been so satisfactory as to place its value beyond question. The majority of these operations of excision have been performed by Thomas Jonnesco, of Bucharest. In these cases a sufficient length of time has elapsed to enable us to decide as to its efficacy. Certainly the excision of the superior sympathetic ganglion will replace the operation of iridectomy or sclerotomy as a cure for glaucoma. Even if it did not accomplish more than the mere relief of pain in these cases, it would be a justifiable procedure. However, it accomplishes more than this in those cases where a certain amount of vision still remains, as it materially improves the visual acuity. This certainly is more than what can be claimed for either iridectomy or sclerotomy. That the excision of the ganglion achieves more than an iridectomy or sclerotomy can be seen from the fact that even in those cases where the latter procedures fail the former still produces good and decided effects.

Heretofore we have lost sight of the influence of the superior cervical ganglion in glaucoma. We are now beginning to realize the fact that the sympathetic nervous system plays a very important part in glaucoma. Though the ganglion is not the seat of the pathological process which gives rise to glaucoma, yet it is the connecting link between the eye and the brain whereby certain effects travel. The relation, however, is not one of cause and effect—this point must not be forgotten.

Thomas Jonnesco was the first who advocated the removal of the superior cervical sympathetic ganglion for glaucoma. His review of the subject, as well as a report of his eight cases, is to be found in the *Wiener Klin. Wochenschr.*, No. 18, 1899.

The operation, according to Jonnesco, is performed as follows: An incision about four (4) inches in length is made, beginning at the mastoid and extending down along the posterior or anterior border of the sterno-cleido-mastoid-muscle. After this, if possible, proceed with a blunt dissector, separating each muscle until you reach the rectus capitis anticus major. For, directly underneath its sheath is the ganglion. On top of it often lies the internal carotid, internal jugular and the pneumogastric nerve enveloped in their own sheath. Remove as completely as possible the ganglion with its branches. Cut the branches as high up as possible, and at least one inch below the ganglion. One cannot but recognize the ganglion because of its peculiarities in shape, color and definite anatomical relationship to the transverse processes of the 2d, 3d, 4th, or 5th cervical vertebræ, rectus cap. ant. maj. muscle, and the internal carotid artery.

It is not necessary to cut or ligate the external jugular or cut the spinal accessory nerve as Dr. Ball suggests, providing we proceed with the blunt dissector after having made the initial skin incision.

The operation is neither lengthy nor bloody, and the wound heals promptly if one proceeds aseptically.

Our entire knowledge of this operation and its success is obtained from journal literature; for, as yet no text-book has incorporated it. It is for this reason the writer takes the liberty of appending a complete bibliography.

The following is the case operated upon by the writer on August 16, 1899:

Mr. H. L., æt. 70, has glaucoma in both eyes. Vision in right eye, nil; in left eye, 20/200. An iridectomy was made in the left eye May, 1898, with excellent results in so far that it reduced the tension and retained, up to date, the same amount of vision. The patient at no time experienced the characteristic glaucomatous pains. However, in the latter part of July the right eye suddenly became inflamed, exceedingly painful and continued so in spite of every remedial effort.

After having explained to the patient the status quo of this excision of the superior cervical sympathetic ganglion, he consented to have it done.

On the day of the operation, August 16, 1899, the tension of the right eyeball was extreme: it was as hard as stone. Patient was unable o sleep at night on account of the severe pain.

Dr. Leslie chloroformed the patient and I removed the ganglion, as above described, without any difficulty. In this case the right superior cervical ganglion was excised, with its branches fully an inch above and below. The ganglion was located upon the fourth cervical vertebra instead of the usual location—between second and third.

The night following the operation was the first the patient was free from the agonizing pain for a long time.

The immediate effects of the operation were: (1) Cessation of pain and a reduction in the tension. (2) A slight pupillary contraction followed shortly afterward. (3) There was slight dysphagia, but it ceased within thirty-six hours. (4) The respiration and pulse remained unaltered. (5) No drooping of the upper lid, such as has occurred in some cases. (6) There was excessive lachrymation for several days.

On the fifth day after the operation, the tension was reduced to +2. On this day the stitches were removed and patient allowed to return home.

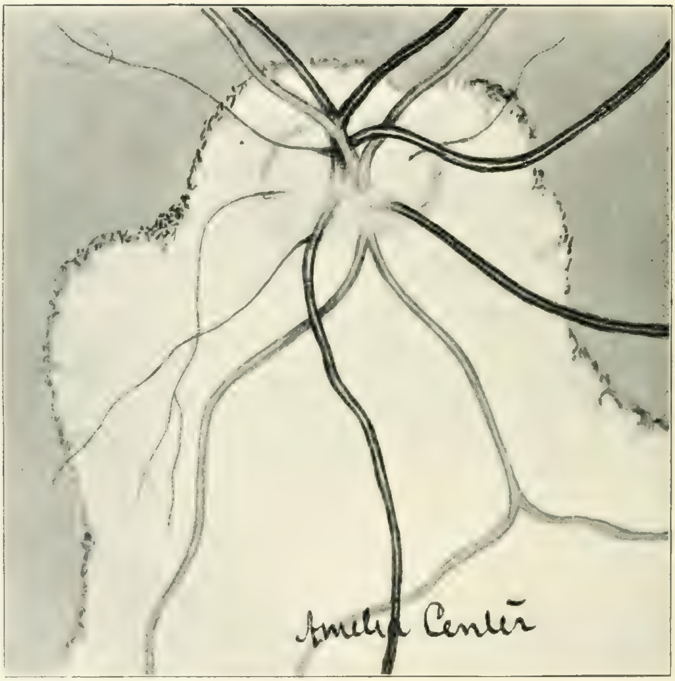
Since the operation the patient has had no sleepless nights and no pain whatever. The good effects kept on developing for nearly two weeks after the operation. At this time the tension was between +1 and +2, and remained so since.

Up to the time of the present writing the operation has had no beneficial influence upon the vision of the left eye. It is very doubtful whether it will, although it is suggested by Jonnesco and Ball that excision of one ganglion may influence both eyes, the one on the opposite side, however, only slightly.

Considering the above case and after a careful study of all reported cases, the writer firmly believes in the unquestioned efficacy of the removal of this ganglion for glaucoma.

If one operates simply for the relief of pain, the ganglion on the same side as the painful eye should be excised. If one eye is painful and vision nil, while the other eye is not painful and there is some vision, remove both superior cervical sympathetic ganglia. In any case of glaucoma, excepting the hemorrhagic variety, remove one or both ganglia, as the case may indicate, whether for the relief of pain or for the purpose of improving vision.

That a resection of this ganglion is a logical procedure can be seen from the following facts: (a) The sympathetic nerve fibers of the eye, descending from either the brain or spinal cord, must pass through the superior sympathetic ganglion. (b) These sympathetic fibers supply the iris, choroid, retina and sclera. (c) They supply the ocular blood vessels. (d) They are found in the unstriated muscle portion of Tenon's capsule.


Amelia Center

Any constant or periodic stimulation or irritation of these sympathetic nerve fibers causes: (a) a constriction of the intra-ocular blood-vessels; (b) a contraction of the circumbulbar muscles, and (c) an increased action of those elements constituting the aqueous humor, hence an interference of intraocular fluid exchange, with a consequent increase of tension if it effects a dilatation of the pupil.

This in brief gives us the main factors which constitute glaucoma. An excision of this superior sympathetic cervical ganlion will produce diametrically the opposite train of results, and in this way acts so satisfactorily in glaucoma.

In conclusion, the writer wishes to express his thanks to Drs. S. Thorne, J. W. Wright, L. Brewer, and L. W. Heydrich, for their timely suggestions during the operation.

914 Jefferson Street.

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A CASE OF MICROPHTHALMIC EYE, WITH LARGE COLOBOMA OF CHOROID.

BY FRANK ALLPORT, M.D.,

CHICAGO, ILL.

Illustrated.

Miss H. T., age 21, consulted me at Chicago Policlinic, April, 1899. Extreme convergent strabismus of right eye. The eye appeared about two-thirds as large as a normal eye. Palpebral fissure six lines shorter than left eye measured on a straight line from canthus to canthus. Cornea and iris much smaller than left eye. Fundus is reproduced by a drawing by Amelia Center. Vision reduced to very indefinite perception of a part of the hand in the extreme horizontal and lateral portions of the visual field. External rectus muscle much impaired in function. Tenotomy of internal rectus, and advancement of external rectus performed, with perfect cosmetic result, as far as bulbar position is concerned.

92 State Street.

CILIATED TUMOR OF THE CONJUNCTIVA.

BY FRANK ALLPORT, M.D.,

CHICAGO, ILL.

Illustrated.

R. K., male, age 13, came to my clinic at the Woman's Medical College, April 3, 1899. He simply complained of an irritability of the left eye, which occasionally became congested. The mother said she had noticed a queer lump in his eye ever since birth. Vision $\frac{20}{20}$—intra-ocular condition normal. No other congenital defect. Parents not related. Examination disclosed good sized tumor of bulbar conjunctiva, covered with long dark hairs, looking exactly like eye-lashes. Tumor removed. Recovery perfect. Miscroscopical examination by Columbus Medical Laboratory as follows :

The specimen is covered on one side by an imperfect layer of epithethial cells. These cells partake of no fixed type. The basement layer of these cells is columnar in shape. The epithelium is set on a basement membrane. There are no papillæ. Immediately under the basement membrane there is a zone of embryonal cells and embryonal blood vessels. Deeper the connective tissue fibers are coarse and there are very few muscles of any sort. There is no uniformity in the arrangement of these fibers. In the midst of these fibers are some blood vessels and around these are aggregations of cells. In this zone also, are a moderate number of hair bulbs, typical in structure. In one place there are several sections of structures that greatly resemble sweat glands; around these there is an abundance of young connective tissue cells. Deeper than this connective tissue is a layer of adipose tissue. In this size are several cystic glands. The epithelial cells are small, rounded and in two or three layers. Continuing toward the under surface, we come back to fibrous tissue and this is the bottom layer, except at one point near the smaller end. Here a layer of embryonal tissue covered by epithelium is imposed. The appearance is as though the same layers had been broken from other portions of the under part.

The picture by Amelia Center faithfully reproduces the appearance of the eye.

92 State Street.

Amelia Center

AN UNUSUAL CASE.

E. W. REAGAN, M.D.,
CANTON, ILL.

On May 30, 1898, John Finley, aged 31 years, of Smithfield, Ill., came to me for treatment of his right eye, giving the following history: Ten years ago he was struck in left eye with a nail. The eye inflamed, and when it recovered the vision was practically useless, as he expressed it, "My left eye is no good." One week ago he noticed the right eye was sore and vision growing dim. He positively states that the right eye has never been injured. Vision at this time was O. D. 6/30 O. S., counting fingers at one meter. Externally the right eye presents a pericorneal zone around upper half. A small scar as though made by a needle was seen in cornea 3 mm from sclerocorneal juncture above, immediately in front of a posterior synechia. On ophthalmoscopic examination the lens at this point presented a dark cloud, which seemed veiled by a greenish film, while the upper one-half of lens was clouded. The left eye was myopic, with a broad crescent out. Refraction —10.00 D. After prescribing a solution of atropia for the right eye and —8.00 D. lens for left eye, I informed him that he would go blind in the right eye and that an operation would restore the sight. He reported from time to time, and on October 9, 1898, the lens having become completely cataractous, I did the combined operation, grasping the iris at the point where it was adherent to the lens and making a broad coloboma. The lens was soft, but I succeeded in getting most of it out of the eye; that which remained settled to the bottom and was ultimately absorbed. I could not, however, find the foreign body. The eye healed kindly, and on November 10, 1898, I furnished him with a +10.00D. lens for right eye, which gave him 6/15 vision, and for the left —10.D., which gave 6/21 vision. With these he worked all winter. February 15, 1899, the correction of O.D. was +10.00S.=+1.00 cyl. ax. 120=V. 6/6M., O.S.—10.00V.=6/21. This correction he is wearing with comfort. It seems strange to me that such a combination could be tolerated; also strange that the patient was not aware of the injury to the right eye at the time it occurred.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, OCTOBER, 1899. NO. 10. NEW SERIES.

EDITORIALS.

THE OCULIST AND THE OPTICIAN.

The controversy between the oculists and opticians still continues. The resolution passed by the American Medical Association at its last meeting in Columbus, in which it expressed itself as of the opinion that treating errors of refraction requires a knowledge of pathology and therapeutics; and that such treatment, consisting of the proper adjustment of lenses, constitutes a portion of medical practice, and shall be undertaken by those qualified to practice medicine and surgery only, seems to have had some such effect upon the opticians who favor the *Keystone* with their communications, as the casual waving of a red flannel shirt is supposed to produce upon the emotional feelings of a mad bull. The language of the resolution is couched in such simple and unequivocal language as to be quite readily interpreted by those even less inclined to criticise the oculist and his chosen field of labor, than our friends the "Ophthalmic Opticians," as some of the more advanced disciples in the profession choose to designate themselves. The "Refracting Opticians" (which we judge is another of several dozen high-sounding titles coined to graphically and complacently picture the labor and position of the up-to-date optician), seems to be greatly disturbed lest the various projected laws in the different States shall place him in a condition, where, like Othello, his occupation will suddenly be ruthlessly torn from him by the members of the medical profession, who venture to practice ophthalmology, and who dare to include in their list of accomplishments the correction of errors of refraction. Some of the optical authors, on this interesting but complicated question, make such advanced pretensions, that when they boldly hold that educated opticians only, and not physicians, nor even the average ophthalmologist, is capable of properly adjusting lenses, we are led to roll our eyes heavenward, and inquire, in the words of the inspired author, "O, Lord, how long?" at the same time making a practical investigation as to the character of nerve tonic consumed by those indulging in such eccentric optical dreams.

The feeling of the average ophthalmologist, toward the vaulting and ambitious optician, who desires to push the former off from the face of Mother Earth, may perhaps be illustrated by the old Quaker, who confidentially said to his wife, "All the world is queer but thee and me, and thee is a little." It certainly does seem queer to us, that the optician cannot entertain the same views upon this subject as we do, and be willing to occupy what we consider to be his legitimate position, and then "stay put," and allow the world ever afterward to pleasantly and regularly proceed on its revolving tour around the various heavenly orbs, where we earnestly hope this controversy has not yet established itself. But our friends and co-workers do not by any means seem inclined to amicably participate in such an Arcadian existence; but, on the contrary, continue to indulge in a dried apple and water diet, or at least in some kind of nourishment that is followed by inflated or swollen-up conditions, until we fear the day is not far distant when we shall be compelled to cringingly beg the permission of the optician to remove a cataract or an eyeball, and then take in washing, or run errands for optical establishments, at odd times to furnish means of subsistence for ourselves and families.

Why cannot the optician be made to understand the dignity and limitations of his own legitimate calling, and be satisfied to properly work at his chosen avocation? We are happy to know that such men as Meyrowitz, Fox, Coe, and others who represent the best elements in optical circles, are satisfied to be and to remain dispensing opticians, and have no ambition to become optometricists, ophthalmic opticians, or even refractionists. Why cannot the optician be made to see that the eye is not a mere mechanical or optical machine like an opera-glass, that can be repaired "while you wait;" but is a living organism, of such a delicate and sensitive nature, that it may be easily and permanently damaged by even improperly adjusted glasses? Why cannot he understand that the best men in the world unanimously agree that good refraction work cannot be done without a mydriatic (which an optician may not legally use); but that the use of a mydriatic must be governed by the pathological conditions of the interior of the eyeball, of which an optician, not being a medically educated man, is incapable of forming an opinion? Why cannot he appreciate that an eye with improper refraction is a pathological eye, with pathological results and sequelæ, and that pathological conditions should be treated only by graduated physicians? Believing the average optician to be possessed of average intelligence, we cannot understand how he can entertain honest views, at variance with these, on the subject, and yet believing him also possessed of average honesty, we must believe in his integrity in the present instance. We wonder where the responsibility lies. Can it be possible that the wholesale optician, desiring to sell test-lenses, glasses, frames, etc., in large quantities, furnishes the means and inspiration to start and maintain some of the optical journals, colleges, etc., for the purpose of producing sentiment, refractionists, "Professors," etc., which will supply a demand for their manufactured articles? Of course this query is wholly incorrect, and entirely inconsistent with the general character and reputation of the trade, and we are confident that at least no wholesale optician in our list of acquaintances would encourage the improper and injurious adjustment of glasses. Still, we cannot refrain from wondering, especially as an editorial, in a recent edition of an optical journal, urges a combined and hand-to-hand contest with school-book publishers and school authorities, intending to force them to abolish text-books on Hygiene, where the advice is given to consult ophthalmologists and not opticians in all cases of defective vision. The publishers of a particular text-book on this subject were addressed by a State association of opticians, through its secretary, who evidently must have thrown out some particularly potent arguments against missionary literature of this character, for the publishers cringingly and apologetically wrote in reply, that they would instantly look the matter up, at the same time assuring the secretary that their *business* interests would not permit them to publish anything which would do an injustice to anybody. It would be interesting to see a copy of the secretary's letter (which, strange to say, is not published), and ascertain just what cogent arguments he brought to bear upon the publishers to reduce them to such a state of abject humility; but perhaps this may be surmised by even those unpossessed of much imagination. The writer of the editorial sums up the matter by advising that the expression of opinion, to such objectionable publishers, be so representative and *forceful* that no publisher can *afford* to ignore it. Shade of Eugene Debs! are such *arguments* to be used in considering the health of our school children?

Is the boycott to become the argument of the "Refracting Professor?"

Two sides can usually be discovered to all questions, and the one under consideration is no exception to the rule. No doubt exists in the minds of anybody that all physicians are not capable of doing refraction work. The general practitioner usually has no time nor inclination to indulge in this sphere of activity, and to his credit be it said, he does not attempt it. He possesses some intelligible idea of his own mental limitations, and acts accordingly. It would be gratifying to note that most non-professional gentlemen attempting refraction work were imbued with the same acuity of mental introspection, but alas, while it may be undoubtedly true that the "truth should not be spoken at all times," this appears to be one of the times when veracity seems permissible, and we are forced to surmise that either these gentlemen have for some time omitted the recitation of their personal catechism, or a clouded intellect appears to be somewhat contagious among the ranks of the "Refracting Professors." Or can it be possible that the cupidity of which oculists are accused by the opticians, through their endeavors to place a few obstacles in the way of the opticians to the full enjoyment of refraction work, is one of the conspicuous attributes in the *ensemble* of the average refractionist? We repeat that general practitioners, and those engaged in other special lines of medical practice, are certainly not qualified to do refraction work, until and unless they have specially fitted themselves for such practice by proper post-graduate work. But the same argument is equally forceful in other lines of special work, such as neurology, gynæcology, laryngology, etc., and yet no one can question their distinct *right* to enter into any of these various avenues of labor, as long as they are legally qualified to practice medicine in any of its branches. Fortunately, however, these arguments fall tolerably flat upon the minds of unprejudiced people, because in these days of high requirements, and post-graduate work, scarcely anybody attempts the practice of any specialty without proper special instruction and experience. This is true of ophthalmology, including refraction work, and the writer is confident that while black sheep may be found in any flock, most physicians engaged in this line of work are reasonably competent to perform it properly. Certainly, admitting that the eye is a part of the human body, and intimately connected with its possible pathology, no one should be permitted to treat it (and under this heading must come refraction work), unless he at least is a doctor of medicine. This is the first requirement, and is the only sure foundation upon which to stand. All other steps must proceed from here. Our esteemed friends and aspiring co-workers, the refracting professors, may, through cupidity, selfishness, stubbornness or deficient appreciation, choose to argue to the contrary, and doubtless their literary organs will fairly scintillate with protracted eructations of eloquence on the subject until the rafters, figuratively speaking, ring again. But no amount of argument will make wrong right, and the time will surely come, when, through a process of general public education, proper restrictions will be placed around this field of labor, just as legislatures have defined the practice of medicine and who shall practice it.

We regret to witness daily the failure on the part of general practitioners to grasp the true significance of refraction work, for, to their shame be it said, many of them send their patients to opticians instead of to ophthalmologists. Such practices are not confined to the less intelligent members of the profession, but pervade its highest ranks. The writer would suggest that our missionary work commence here, and that both in our personal relations and public writings for general societies and medical journals, we endeavor to point out to the general practitioner the error of his way, and the illogical and untenable position he so frequently occupies. F. A.

INVESTIGATORS IN OPHTHALMOLOGY AND THEIR CRITICS.

The *personnel* of our too numerous army of medical men is made up of a curious variety of individuals, presenting interesting differences, but none more so than as regards their attitude toward new discoveries and methods. These differences are even of more practical than speculative interest.

In appraising the value and importance of original contributions to medical knowledge, it is always useful to consider the contributor when we are really acquainted with his personality and the attributes of character. While his work often bears the impress of his individuality and internal evidences of its truth, excellency or worthlessness, sometimes we can hardly judge of it without considering the temperament and character of its author. But how many who assume in their own estimation a correctly critical attitude, consider the influence their own character and peculiarities exerts upon their valuation of another's work ?

So many and various are the contributions to the ophthalmology of to-day which are blindly accepted on the one hand and keenly scrutinized and criticised on the other, that some friction has resulted, amusing to some and depressing to others.

It must be admitted that some of the laborers upon our really beautiful wing of the great edifice of Scientific Medicine have endeavored to adorn it with questionable taste, and that their grotesque efforts violate all the harmonies of the general architectural plan. Such a one is unfortunately too often ignorant of the foundations — the ground principles of the superstructure. Dazzled by vanity, ever seeking something new, he would construct an annex, and calls persistently to his fellow workmen to assist him in removing the walls built by some one dead and gone that he may substitute for them his worthless and flimsy fabric. Another who ponders long and labors late solves some problem of the Great Design, but his fellows cease their daily routine not to listen but to deride.

To drop metaphor: If ophthalmological critics were more tolerant and more familiar with human nature they would not be so often misled by the paradox presented by those who, patient in digging out clinical facts, yet through the false perspective of a distorted and too sanguine enthusiasm, grossly exaggerate their value and make themselves ridiculous in attempting to apply them.

It is neither common sense nor common justice to throw away the facts or to refuse to test their possible correctness, instead of making a proper use of them. The absurdity of the investigator is quite equaled by the intolerant bigotry and captiousness of the critic, and perhaps after all scientific progress is more retarded by the latter than the former. It is well to remember that it is far easier to destroy than to create, and that eccentricity has often proved a misnomer for originality.

We have all heard the oculist in full routine practice thank God that he is not bitten with the *mania scribendi.* His large practical experience enables him to complacently state off-hand that certain newly-published views are "all bosh." Perhaps he is right; but unfortunately the literary reticence (often really laziness and literary incapacity) of which he is so proud, deprives us of the means of judging the truth or falsity of his assumptions. Editors stand ready to publish the treasures of his experience, but rarely do we hear from him who is (though he may not know it) in the words of Verulam, "A debtor to his profession."

F. B. L.

CORRESPONDENCE.

AN ARTIFICIAL EYE FILLED IN WITH WAX.

SALT LAKE CITY, UTAH, August 26, 1899.

EDITORS OPHTHALMIC RECORD:

In 1894, Mrs. M. C., aged 62, came to have a glass eye inserted. Her eye had been lost years ago, and was taken out somewhere in England.

The stump was small and irregular; the orbital space was deep, owing to the way the eye had been removed. I fitted her with a large shell, and she was pleased with its appearance.

A few days after she was so unfortunate as to break it, and not being able to procure another, she thought she would mend it, so getting some dentist's wax, she filled up the space under the shell and put it in its place.

After a time she became alarmed, and called to see if there was any danger in wearing the mended eye. The wax held the segments in place, and in looking at the eye I could not tell that it had been broken. She spoke of the improved cosmetic effect, and also stated that there was no secretion found under and about the eye as formerly.

I told her to continue the use of the eye, and report if any bad effects occurred. She continued the use of it up to her death, which occurred some six months later. IRA A. E. LYONS.

[The above case is of interest in connection with Snellen's suggestion, translated by Dr. Black, in the OPHTHALMIC RECORD for July, and Dr. Black's favorable experienc with such filled in artificial eyes, reported at the recent meeting of the Rocky Mountain Inter-state Medical Association.—ED.]

REVIEWS.

ETIOLOGY AND THERAPY OF PURULENT DACRYOCISTITIS.—(*Beitrage Zur Augenheilkunde.*)—DR. N. CAHN.—From the Hagensberg Private Clinic in Riga.—Diseases of the tear passages are seldom observed in comparison with disease of other parts of the eye. Thus, for example, Hasner[1] gives the following statistics:

Disease of the conjunctiva	24%
" " cornea	20%
" " lens	17%
" " uvea	13%
" " lids	11%
Subjective ocular disturbance	5 1/2%
Disease of the whole eye	2 1/2%
" " tear passages	2 1/2%

Nevertheless, upon entering the reception room of any moderately busy oculist, one or more sufferers from purulent dacryocistitis are to be seen. This phenomenon depends upon the fact that diseases of the tear passages ostensibly withstand all kinds of treatment, and that relapses occur only too frequently. These facts have impelled me to more closely investigate the subject.

As in medical sciences generally, so also here especially, a certain disposition forms an important etiological factor.

Some under the leadership of Prof. Hasner, who is noted for his fundamental work on the tear conducting apparatus, assume a local disposition, which is supposed to depend upon an asymmetrical formation of the facial skeleton; others, with Prof. Arlt at their head, incline to the belief in a general disposition of the organism; almost all others mention the fact that the female sex suffers more frequently from tear duct affections than the male, according to Hasner[2] three times as often (2.93:1.) Further, we frequently read that the left tear duct becomes diseased more often than the right, and the explanation given is that the lachrymal duct is narrower on the left side than on the right. Hasner, however, has demonstrated that this is not correct; but that an asymmetric arrangement of both lachrymal ducts plays a much more important rôle, as appears in the following table:

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[1] Hasner, *Beitr. Z. Physiol. u. Pathol. d. Thran enab leitz ung sapparate.*

[2] Hasner, l. c.

	Length of the Nasal Lachrymal Canal		Distance of the posterior edge of the upper opening of the osseous nasal canal from the floor of the nasal cavity		Distance of the posterior edge of the upper opening of the osseous nasal canal from the apex of the nasal bones		Distance of the posterior[1] edge of the upper opening of the osseous nasal canal from the junction of both nasal bones with the frontal bone	
	RIGHT.	LEFT.	RIGHT.	LEFT.	RIGHT.	LEFT.	RIGHT.	LEFT.
1	4.2	4.6	14	14	14	14	17	17
2	5.5	5.2	12	15	15	15	13	14
3	2.	2.5	11	12	13	14	13	14
4	2.	2.	7	9	11	10	14	14
5	6.	6.5	14	15	13	14	14	14
6	6.	6.5	13	14	15	13	17	15
7	4.5	5.	11	12	16	14	15	14
8	3.5	3.	11	11	14	14	16	16
9	4.5	3.5	14	14	......	......	15	15

Therefore, the author thinks considerable deviation, with respect to the length and direction of both lachrymal ducts, exists even in the normal condition in one and the same individual. Furthermore, it must be added that the entire osseous skeleton of the nasal cavities, indeed all the bones of the face are asymmetrically developed in each person. We find even by superficial observation, continues Hasner, that one facial half is more strongly developed, and this asymmetry often develops into a deforming and noticeable obliquity of the head, especially of the face, so that one is inclined to call this condition a true skoliosis of the cephalic vertebræ. The nasal bones and the nasal septum never stand in the median line, but are displaced toward that side in which the bones and cavities have a lesser development. According to Hasner's opinion this asymmetry is produced by the function of chewing; since man for the greater part chews with one and the same half of the mouth, conditions leading to the greater development of the muscles and bones of this side are produced. Therefore, not only the structure of the nasal ducts, but also of the nasal muscles, nasal bones, and nasal cavities in general, is of influence in the development of the lachrymal sac. In every text-book of ophthalmology, the statement may be found that flat noses dispose to disease of the lachrymal passages, since in these the so-called Hasner's valves suffer an alteration of position; while the normal angle between the osseous nasal canal and the horizontal is 60° to 70°, in a flat nose it attains only 45°. Consequently, in expiration, mucus may easily get into the nasal duct, for it happens even in normal position of the valve that a foreign body, *e. g.* (snuff), penetrates into the naso-lachrymal duct in powerful expiration, and there produces an inflammation.[1] In opposition to all this, Arlt[2] maintains the following: If any one believes that diseases of the lachrymal ducts are caused by diseases of the nose, it is a very erroneous conception of the mutual inter-dependence of the diseases. In general, we must assume, that both affections exist independently and simultaneously beside each other, being produced and maintained by one and the same cause. The reason why our therapy in disease of the mucous membrane of the naso-pharynx, and its accessory cavities is without effect, depends, says Arlt, upon the fact that these affections are almost, without exception, connected with a general disturbance of health, and unhygienic methods of living, and therefore demand also a general pharmaceutical and diatetic treatment. They develop more frequently in the poor, in people who inhabit moist, freshly whitened quarters. The immediate cause of the blenorrhœa of the lachrymal sac, regardless of what disposition may preëxist, is in a majority of cases an obstruction to the conduction of tears. Assumed that this is produced by swelling of the mucous membrane of the lachrymal duct, then the tears can no longer completely drain off into the nose, but stagnate in the tear sac, where they rapidly decompose, since a great number of microbes are carried along with them from the conjunctival sac, and find in the standing fluids,[3] warmed to the body's temperature, the most favorable conditions for their development. Soon a purulent fluid is secreted; in short, there is developed the full picture of a purulent dacryocystitis. It is true, that the swelling of the mucous membrane of the nose, or of the lachrymal duct, can never reach so high a degree as to be able to produce an absolute impassability of the tears. Although the great venous network, immediately beneath the mucous membrane, may by itself occasion a considerable stenosis.[1] If, however, without the existence of special swelling of the mucous membrane, or cicatricial strictures, purulent dacryocystitis is frequently observed, it is partly to be ascribed to the fact that a morbid process has extended, by continuity from the nose to the nasal duct, and further upward to the tear sac, and partly to the restricted or completely interrupted nasal respiration, which last fact has generally received little attention, and to which we will soon return.

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[1] Hasner, l. c.

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[1] Stellwag von Carion, *Lehrb. b. Prakt. Augenhlkde.*

[2] Arlt, *Die Krankheiten des Auges.*

[3] Knies, *Grundriefs d. Augenhlkde.*

The orbicularis muscle is to be regarded as a regulator[2] of lachrymal conduction. Various opinions as to the process of this physiological action have ruled since ancient times, each of which has its justification. Since several factors work together in this, the question will be most readily solved by dividing the process into four factors. The tears assemble in the conjunctival sac and are driven down in the act of winking by the pressure of the orbicularis muscle, into the lachrymal canal (first factor;) the entrance of the tears into the lachrymal duct is favored (second factor) by passive dilatation[3] (Henke) of the latter during closure of the lids, for the fibers of the palpebral portion arise in part from the ligamentum canthi internum (M. Horneri) and during contraction of the same to close the lids the internal palpebral ligament is drawn away from the lachrymal bone, consequently the anterior wall of the tear sac which is intimately united to it. In this way the lachrymal sac is dilated and the contents of the lachrymal canal aspirated.

The accession of the new volumes of tears, together with their weight, and especially the elasticity of the tear ducts (third factor), aid the transportation of the lachrymal fluid out of the sac into the lachrymal duct. Therefore we observe also in atony of the tear sac in which the elasticity has disappeared a retardation or total interruption of the tear conduction although the lachrymal duct is completely permeable. Finally (fourth factor) nasal respiration has its effect, to the importance of which for the downflow of the tears Hasner[4] was the first to call attention; with each inspiration there is a diminution of air tension in the nasal duct, and the tears are aspirated from the nasal duct into the nose. Fuchs[5] disputes this so-called aspiration theory of Hasner and Weber in the following words: "The penetration of the tears into the tear duct continues even when the road into the nose is destroyed by obliteration of the nasal duct." As above mentioned the entrance of the tears into the nasal sac is accomplished by passive dilatation of the tear sac. (Second factor.) On the other hand the permeability of the lachrymal duct is an absolutely necessary condition for the occurrence of the fourth factor, in which by means of rarefaction of the air in the nose during each inspiration the tears are aspirated out of the lower portion of the nasal duct in the nose. Now it is intelligible that an interruption or an interference of nasal respiration may easily lead to collection of tears above the mouth of the lachrymal duct, especially in rhinitis, with swelling of the nasal mucous-membrane.

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[1] Fuchs, *Lehrb. d. Augenhlkde.*

[2] Arlt. *Die Krankheiten des Auges.*

[3] W. Henke, Die Offnung und Schliefsung der Augenlider und des Thranensackes. *Arch. f. Ophthalm.* 1858.

[4] Hasler, i. c.

[5] Fuchs, *Lehrb. d. Augenhlkde.*

Therefore, we have in the first place among the etiological factors mechanical interference with tear conduction as is occasioned by swelling of the mucous-membrane, foreign bodies in the inferior meatus (p.: Arlt.); furthermore, neoplasms in the middle meatus of the nose or in the antrum of Highmore, accumulation of mucous in the antrum, bony outgrowths, fracture of the bone with infraction, abnormal position of the inferior turbinated body or the septum, rhinoliths, cicatricial strictures after eczema and ulcers (scrofulous, syphilitic, lupus), furthermore, caries of the nasal bones or other bones in the neighborhood of the lachrymal sac especially of a scrofulous or syphilitic nature. Finally not infrequently a direct continuation of the diseased process from the neighborhood is observed, especially from the nose, but also from the conjunctiva. Purulent dacryocystitis and rhinitis must be considered as very frequent complications of trachoma, according to Galezowski in 90 per cent of the cases, according to Kuhnt[1] in 32 per cent, and according to Gerber in 65.5 per cent. Kuhnt considers a direct transference from the lachrymal sac to be improbable since diphtheria and blenorrhea of the conjunctiva are very seldom followed by affectations of the lachrymal sac.

As for the treatment of purulent dacryocystitis I shall not mention all the methods which have been employed, and are still employed, but shall restrict myself simply to describing the methods that I have been employing during the last three years. I seldom employ systematic probing, only in such cases certainly in which strictures are demonstrable. My principal object is to allay the secretion or cause it to stop; to which Puech[2] has called special attention. By regularly washing out the lachrymal canal with disinfectants and astringents we may accomplish considerable improvement in the most obstinate cases in the course of time.

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[1] *Kuhnt, Behandlung der Conjunctivitis granulosa.*

[2] *Puech, Recueil d'Ophtalmologie*, November, 1893.

For irrigation I use a Wecker's catheter, which is not provided, as customary, with a rubber bulb, but with a piston syringe (as Anel's), so as to be able to force the fluid through under pressure, by which means the folds of the mucous-membrane are smoothed out so that the medicament comes in contact with all portions of it. Koenigstein,[1] of Vienna, recommends, instead of Wecker's catheter, similar fenestrated ones with blunt conical ends, similar to urethral catheters; these are very practical, since they do not so easily wound the mucous membrane. The catheter is introduced approximately to the middle of the lachrymal sac and the fluid forced through under moderate pressure while the catheter is gradually withdrawn. If it is desired to use several syringefuls, then the catheter must probably be reintroduced several times if really all parts of the mucous membrane are to be touched, which in chronic processes is always necessary.

Before probing or catheterizing, I always employ slitting of the lachrymal caniliculus above as well as below, and am not deterred from a repetition of the slitting if a reunion has occurred, as often happens with the upper caniliculus.

Special attention must be given to the fundus of the lachrymal sac, because by ordinary manipulation it is not touched by the irrigating fluid. With the aid of Anel's syringe with curved point, it is possible to give the fluid such a direction that it enters directly into the fundus. After I have washed out the tear canal several times with a lukewarm disinfectant, I press several times with the finger in the neighborhood of the tear sac, and thereupon wash out the tear sac with an astringent. Of the disinfectants, I use those which stimulate slightly, but certainly kill all bacteria —e. g., oxycyanate of mercury, 1 to 5000 to 1 to 10000; permanganate of pot., 1 to 10000, or sublimate, 1 to 10000 to 20000; the latter is to be avoided if it is desired to use immediately afterward silver nitrate, which is easily weakened in its action by the formation of silver chloride. Silver nitrate is one of the favorite, and in reality most effectual, astringents in ophthalmology. Of the numerous silver salts most recently discovered and warmly recommended, not a single one has succeeded in driving silver nitrate from the field; nevertheless, I desire to especially recommend one, argonin. After I became acquainted with the remarkable success of the treatment of gonorrhea with argonin, in literature, I began to employ the same in eye practice, and with it have obtained, I might almost say, wonderful results in purulent dacryocystitis. Another advantage is that this remedy does not stimulate at all, for in irrigation of the tear duct it is impossible to avoid touching the conjunctiva, and I have never observed the slightest indication of any irritation. Ordinarily I employ a 4 to 6 per cent argonin sol. in distilled water and glycerin, equal parts; as soon as the secretion loses its purulent character, I pass to a 2 per cent or even weaker solution; finally I use only a disinfectant; in scrofulous children, I conclude the treatment by washing out the tear duct with a ¼ to ½ per cent iodo-glycerine sol. three to four weeks.

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[1] *Therapeut. Lexicon*, Dakryocystoblennorrhoe.

The proper attention must naturally always be given to the general condition (scrofulosis, lues).

In very obstinate cases of purulent dacryocystitis, especially with fistula, I have obtained brilliant results with the pressure bandage, after precedent and with coincident medical treatment. Since, however, the eye will not long endure the pressure bandage, I had K. Marggraf in Riga prepare a compressor similar to that of Sharp. This consists of a head-band, from the middle of which a thick curved wire passes to the neighborhood of the tear duct; there an oval button is fastened to it, which, by means of a screw, may be brought more or less near the tear sac, so that, according to the indications, a stronger or weaker pressure may be brought to bear in this region. The button is covered with soft leather, and a small piece of gauze or cotton is laid in the region of the tear duct. If compression does not avail, and there is suspicion of granulation formation in the tear duct or of caries of the lachrymal bone, it is advisable to widen the fistulous opening above and below with the scissors, and carefully curette with a sharp spoon after the bone has been completely exposed. Extirpation of the tear sac remains the last resort, and it seems to me that this recourse may be avoided by continuous and energetic treatment, all the more so since the results of extirpation are not at all attractive.

In speaking of etiology I referred to the great importance of the orbicularis muscle in tear conduction. This frequently loses its contractility, as also the anterior wall of the tear sac may lose its elasticity, thus producing an atony of the lachrymal sac. In such cases, faradization of the neighborhood of the lachrymal sac recommended by Puech[1] is of some use.

In conclusion, I would permit myself to draw the attention of colleagues to the following: In the Jaesche-Arlt operation for trichiasis and in some of its modifications most authors recommend emphatically that so far as possible the fibers of Horner's muscle be cut out in order to in this way avoid recurrence. I am of the opinion we should consider the preservation of this muscle, because it favors but very slightly the occurrence of trichiasis, and on the other hand is necessary for the production of an unrestrained tear conduction; much more so, since after the operation on account of the shortening of the skin and the separation of the lids from the eyeball the lachrymal puncta are further removed from the conjunctival sac than in the dormal condition. By this means tear drainage is rendered considerably more difficult, a circumstance which of itself is sufficient to produce disease of the lachrymal duct.

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[1] *Recueil d'Ophtalmologie*, Nov., 189[illegible].

Melville Black.

Dr. S. D. Risley said in a brief paper before the Section on Neurology, *American Medical Association* on the "*Ocular Phases of Headache*," that the subject chosen for the symposium was one of great interest to the ophthalmologist, since in the last one thousand private eye patients applying for treatment for all causes fifty per cent of them complained of this symptom, and a large percentage of these came by the advice of their family physician, or through the persuasion of a friend, complaining of headache alone, and were unconscious of any ocular trouble.

While it had come to be generally recognized that eye strain was frequently the sole and sufficient cause for headache, the fact that the eyes might be the unsuspected cause, needed wider recognition. There was, however, no necessary relation in many patients between existing errors of refraction and pain in the head. Glasses were often prescribed greatly to the comfort of the patient in relieving eye symptoms, but pain in the head persisted. Then, too, it was quite common to find two patients with similar ocular defects, one of whom suffered only from eye symptoms, while the other was constantly in the slough of semi-invalidism through pain in the head and other reflex phenomena, both of whom found complete relief from glasses so nearly the same that they might be used interchangeably. Such experiences suggested individual peculiarities, e. g. of environment, the neurotic temperament, or possibly the existence of some constitutional diathesis, as rheumatism and gout.

It was stated as an interesting fact that those patients who suffered most from local manifestations of eye strain, e. g. impaired vision from high defects of refraction, inflamed eyelids, recurring styes, conjunctivitis, etc., although they frequently complained also of headache, did not, as a rule, belong to the headache group.

The location of the pain when due to eye strain was suggestive. Vertex pain was comparatively rarely due to the eyes, but when located in the brow or periorbital region, or in the occiput and nape of the neck, ocular participation should always be suspected.

There was great variety in the manifestation of pain. Many persons suffered more or less constantly with a dull pain in one or more of the regions named, without violent exacerbations, while others, although suffering more or less constantly, were subject to a progressive aggravation of the symptoms until the crisis came in a violent onset of sick or nervous headache, which drove them to bed in a darkened room, from which they emerged after twelve to twenty-four hours, with tender and weak eyes, only to pass once more through the inevitable cycle of suffering. The attacks were frequently regarded as due to digestive disturbance, fatigue, or to heredity, the eyes not being suspected as the cause. In cases of recurring sick headache due to eye strain heredity especially was very often considered as the important disposing cause. Dr. Risley urged that while the neurotic temperament might be a family trait thereby affording a predisposition to pain, it was far more probable that the ocular defect causing the eye strain was hereditary, since the regularity with which certain defects, e. g. hypermetropic astigmatism, are handed down from parent to child is one of the most striking facts in ophthalmology. He pointed out the relation between abnormalities in the shape of the eyeball upon which errors of refraction ordinarily depend, and the faulty form of the bony orbit associated with certain distortions of the skull, and called attention to this fact as one of the instances in which disease and impairment of function depended upon a congenital anatomical deformity.

The sudden onset of headache during or after middle life, or following recovery from acute disease it was urged did not exclude the eyes as an etiological factor. The main points of the paper were enforced by brief histories of illustrated cases representing different groups of patients. The paper was then summarized in the following conclusions as established by clinical experience:

(1). That abnormalities of the ocular apparatus are in a large group of patients the sole and sufficient cause of headache.

(2). That these abnormalities of vision may be the unsuspected cause, and therefore, that the absence of symptoms obviously referable to the eyes does not exclude them as an etiological factor in headache, insomnia, vertigo, petit chorea in children, and certain stomach derangements.

(3). That the recent or sudden development of symptoms, e. g. after attacks of severe illness, as typhoid fever, the exanthemata, etc., or in association with more or less acute exacerbations of some general dyscrasia, is not sufficient evidence against ocular participation in causing the symptoms.

(4). That the participation of the eyes as an etiological factor in headache can be positively excluded only in the absence of ocular disease or after the most painstaking correction of any existing error of refraction or abnormality of binocular balance.

(5). That for the relief of reflex symptoms accurate corrections are essential, and these may be secured only by the more or less prolonged use of a strong cycloplegic.

(6). That immediate relief by these corrections in a large group of patients is not to be expected since the pain is frequently due to associated pathologic, conditions of the fundus oculi, and these require time to cure.

RARE CASE OF ABSOLUTE COLOR-BLINDNESS.—(Fulkala, Vincenz, *Klin. Monatslbl. f. Aguenhkde.* May, 1898.)

Reports the case of a man who had myopia 3.5 D in both eyes. Vision, R.—0.1, which in weaker light rose to 0.2; read Jaeger No. 3 readily. Vision, L.—0. 0.05; read Jaeger No. 6 in dim light; he was a little light-shy, and carried his head upward and pinched the lids together; he was otherwise sound, strong and well developed. He said that shortly after birth he had brain trouble, and did not see at all well until the tenth or eleventh year, when the vision greatly improved; his family had good eyes; there was no astigmatism ; the fundus was the same in both eyes ; the color and contour of the papilla and the eye ground were normal ; the blood vessels were somewhat narrow and relatively few, which would account for the lowered vision. He said that since childhood he had never been able to distinguish any colors. Examination with colored paper showed that all colors seemed to be dark gray, white and black ; pure black was darker to him than red or violet. There seemed to be no difference in color, to him, between a highly colored picture, a copper or steel-plate or photograph.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. Allen T. Haight, of Chicago, has returned from his European trip.

Dr. C. H. Beard, of Chicago, has returned from his vacation in Kentucky.

Dr. D. B. St. John Roosa, of New York City, has been spending the summer abroad.

Dr. W. H. Wilder, of Chicago, has been spending his vacation in the western mountains.

In Jena a new University Eye-Clinic has just been completed. Professor Kuhnt is the director.

Dr. Casey A. Wood has been spending the summer at his delightful summer home in Kenilworth, Ill.

Dr. George M. Gould, Philadelphia, was elected President of the Association of Medical Libraries, which was organized in 1898.

A competent ophthalmic assistant is needed in one of the Chicago dispensaries. Address the News Editor of the Record, Dr. Frank Allport, 92 State St., Chicago.

A new Eye-Clinic has been opened in the University of Breslau. It is due to Professor Foerster's effort that it was built. His successor, Professor Uhthoff, is the director. It has forty-eight beds.

Dr. S. Lewis Ziegler, of Philadelphia, who has been abroad for the past three months, has returned home. While in Holland he attended the Ophthalmological Congress, which recently met at Utrecht.

LIME IN THE EYES.—Washing out the eye immediately with a solution of sugar water is said to stop the pain at once, and lessen the danger of permanent injury. The sugar enters into a chemical combination with the lime, which loses its caustic properties.

WE ARE delighted to witness the continued good health of our venerable friend, Dr. E. L. Holmes, of Chicago. He looks much better than he did a year ago, and a short time ago attended a meeting of the Physicians' Club of Chicago, and made a speech on "Medical Ethics."

DR. NOYES, of New York, who has been spending the summer abroad, has returned, and has commenced his usually interesting work at the New York Eye and Ear Infirmary. It was noticed at a recent visit to the Eye and Ear Infirmary, that a narrow Graefe's cataract knife is usually used for the destruction of capsular cataracts. They claim that by carefully using the back of the knife as a fulcrum that the cornea is not unduly incised.

DR. HERMANN KNAPP, who has been spending the summer abroad, has returned to New York. Dr. Arnold Knapp, his agreeable and talented son, who has been working at the New York Ophthalmic and Aural Institute for several years and during his father's absence, is rapidly following in the footsteps of his father. He is a sincere and earnest worker, and all who visit the institution may feel sure of a kindly and hearty welcome.

THE NEW Massachusetts Eye and Ear Infirmary is a thing of beauty and a joy forever. It is located at 233 Charles Street, corner of Fruit Street, Boston, only a few blocks from the old institution. It is a handsome brick structure, with all of the very best and latest improvements. It must be a pleasure to work in such a well-ordered building. The plant cost $280,000, and is all paid for. The operating room is the most beautiful room of its kind in this country. One side of the room is almost entirely glass, and the light is simply superb, as the building overlooks the Back Bay, and there is, and never will be, any possible obstruction to the ingress of light. Cataract operations and iridectomies are all made on the patient's bed; each bed is a narrow iron structure, with large easy-running wheels on each leg, so that the patient is easily rolled from one part of the building to the other. The heads of the beds are so constructed that they do not in any way interfere with free action on the part of the operator. Dark rooms for ophthalmoscopic examinations can be found in almost any part of the hospital. One of the features of the hospital is what they call their isolated wards. This is a part of the building absolutely cut off from all other parts of the building, and contains twenty beds. In this part of the hospital they place all of their contageous cases. The rooms, halls, furniture, etc., are so made that they can all be thoroughly washed down with a hose and scrubbed with soap and water. This part of the hospital is really a hospital in itself. It is supplied with its own nurses, medicines, bedding, towels, appliances, etc., and large sterilizers are always at work cleaning and purifying the various articles which have been used. This institution is truly a model, and any one contemplating the building of an eye and ear infirmary would do well to make Boston a visit.

DR. WILLIAM R. MURRAY, who has been associated with Dr. H. V. Würdemann in Milwaukee for the past two years, will practice ophthalmology and otology in Minneapolis, Minn., after October 15, 1899.

DR. NELSON M. BLACK, who has been with the Eighth Army Corps as Captain and Assistant Surgeon in the Philippines, returned with his regiment, First North Dakota Volunteers, August 1. He participated in over twenty battles and skirmishes, beginning with the fighting around Manila and the battle of Caloocan. Before entering into active service in the field he did much of the ophthalmic and aural practice of the American army, being delegated for this work. After October 1 he will again be associated with Dr. H. V. Würdemann in Milwaukee, with whom he practiced before entering the army.

AT THE meeting of the Mississippi Valley Medical Association, in Chicago, the following ophthalmological papers were read:

The Therapeutics of Infectious Conjunctivitis, by Dudley S. Reynolds.

Supra-Renal Gland as a Therapeutic Agent in Ophthalmology, Otology, and Rhinology, Flavel B. Tiffany, Kansas City, Mo.

Introversion of the Iris, L. W. Beardsley, St. Louis, Mo.

Treatment of Certain Ocular Diseases by Excision of the Cervical Sympathetic Ganglia, James Moores Ball, St. Louis, Mo.

Beta-Eucain as an Anesthetic in Eye Surgery, W. H. Poole, Detroit, Mich.

Removal of Cervical Sympathetic for Epilepsy, Exophthalmic Goitre and Glaucoma, Emory Lanphear, St. Louis, Mo.

Among the clinics was one by W. H. Wilder, at the Eye and Ear

Infirmary, on Tuesday, September 26; one by H. M. Starkey, at Mercy Hospital, September 27; another by W. H. Wilder, at the Eye and Ear Infirmary, September 28; another by F. C. Hotz, at Rush Medical College, September 29; another by W. L. Noble at the Clinical School, October 2; another by H. M. Starkey, at Mercy Hospital, October 9; another by C. A. Wood, at the Post-Graduate Hospital, October 10; another by W. H. Wilder, at the Eye and Ear Infirmary, October 10; another by W. H. Wilder, at the Eye and Ear Infirmary, October 12; another by C. A. Wood, at the Post-Graduate Hospital, October 13, and another by F. C. Hotz, at the Rush Medical College, October 13.

BENEFIT OF REST AFTER OPERATIONS ON THE EYE. — E. Clarke recently exhibited a set of rabbits' eyes on which operations had been performed, showing that when the animals were kept under the influence of an anesthetic for ten minutes to half an hour afterward, the wound closed, and the anterior chamber re-formed very rapidly, until it was scarcely possible to distinguish the operated from the sound eye. Animals allowed to recover from the anesthetic, and not killed for half to two and three-quarters hours afterward, showed evidences of irritation in the eye, turbid aqueous, etc. His experiments confirm the extreme rapidity with which the aqueous is resected under favorable conditions, and the value of rigid rest.—*Clinical Journal, August 30. Abstracted from the Journ. Am. Med. Asso.*

ALBUMINURIC RETINITIS.—Samuel West.—*Medical Press and Circular* (London), September 6. West brings this communication to a conclusion by summing up the facts which he thinks justify the drawing of a sharp distinction between the two forms of albuminuric retinitis, the degenerative and the exudative. He says they stand in strong contrast with each other in the following respects: 1. Of the forms of disease with which they are usually associated—the degenerative, with granular kidney—the exudative especially, with parenchymatous nephritis. 2. Of their nature and cause; the exudative being inflammatory, and probably toxic in origin; the degenerative, consequent on vascular changes, and more or less mechanical in origin. 3. Of sight; for the exudative, even in extreme forms, may recover, with little or no defect of sight; but with the degenerative, if there is any impairment of sight, it is usually progressive. 4. Of diagnostic value; the exudative being an interesting by-phenomenon of chronic parenchymatous nephritis, an affection, the existence of which is obvious enough, while in granular kidney the degenerative often makes the diagnosis certain in cases which have been hitherto obscure. 5. Of risk of life; for while in both cases it indicates a grave form of renal disease, which may of itself prove fatal, in granular kidney it indicates, in addition, all those dangers to which arterial disease exposes the patient. He thinks, therefore, that the distinction is not only justified by the facts, but explains many of the apparent contradictions which are made by different authors. — *Abstracted from the Journal of the A. M. A.*

PARTIAL SUBSTITUTION OF THE CORNEA.—(Kuhnt.)—An experience with nearly a thousand patients in the last fifteen years, with ulcerative processes, perforations after ulcerations, or after removal of fresh or old prolapse of the iris, fistulæ, karatoceles, incipient partial staphylomata, injuries with or without an opening into the inner eye, or after various operations, all treated by applying a flap of the bulbar conjunctiva with or without a stem, as the substituting plastic material, enables Kuhnt to affirm the extreme benefits derived from this simple process. The shape of the eye is retained, and sometimes part of the vision, even after severe injuries or lesions. The flap is sometimes left attached at both ends, sometimes reënforced with a second flap, freshening the edges of the wound before covering it. In case of an ulceration, after evacuation and cleansing, the flap is applied, and the success is surprising. Pain disappears, and healing is complete in five or seven days, after which the flap gradually vanishes, finally leaving nothing but a kind of pannis tenuis.—*Abstracted from the Journ. Am. Med. Asso.*

PARENCHYMATOUS KERATITIS IN ACQUIRED SYPHILIS. — (E. Roubiceck.)— *Weiner Klinische Rundschau*, September 2.—While specific treatment is unmistakably effective in this affection with acquired syphilis, mercurial inunctions have no effect on congenital cases, and hence inunctions are not applied to children in Deyl's clinic. Roubiceck reports several observations which differ in several points from the schema established by Valude: he claims that in case of acquired syphilis the keratitis is unilateral, disproved by two of the observations; also that the pain is less than in congenital cases, with no lachrymation or shrinking from light, which was the reverse of what was observed in another case. But the observations confirmed his other points: the lesser vascularization with acquired syphilis, and the fact that the cloudiness of the cornea commences at the edge, with distinct, cloudy patches, which slowly merge together. With congenital syphilis, the tongue-shaped patches of cloudiness soon spread over the entire area of the cornea. Many cases of the affection, with acquired syphilis, have probably been included with the congenital, especially in children, as we are apt to forget that children can acquire syphilis. Roubiceck considers it almost impossible to distinguish between interstitial keratitis, from acquired or congenital syphilis, as experience has shown that Hutchinson's stigmata can occur with acquired syphilis. Fournier advises the following questions: Syphilis in the family; do the parents acknowledge it? syphilitic stigmata on them; occurrence of abortion, premature births, eclampsia and convulsions, bearing in mind the possibility of lead and tobacco intoxication, as women in tobacco factories abort regularly. — *Abstracted from the Journ. Am. Med. Asso.*

CARL WALDHAUER was born December 20, 1820, at Sallenen, in Kurland, and died April 30, 1899, at Mitau, in Kurland.

Again one of the oldest pupils of Von Graefe has departed. In 1858 Waldhauer located at Riga as oculist, and from 1863 to 1879 was director of the Widow Reimers' Eye Hospital. His work here was blessed with great success. He also educated a number of young oculists. Later on he moved to Mitau, but was forced to give up his practice on account of a serious disease of the eyes.

His publications all dealt with practical ophthalmology, especially with the operation for trichiasis, which is so frequent in Kurland, where trachoma is extremely prevalent, with interesting cases and injuries. He was in looks and manners a true German, and will live in the memory of all who were fortunate enough to know him.

The following are the most important of his publications: Cataract Punctata (Arch. f. Ophth., XXXI, I); Tumors of the Eye and Orbit, Petersburg Med. Woch, 1877); Operation of the Ptosis (Ibid., 1886); Diabetic Cataract (Ibid., 1884); l'Operation du Trichiasis (Arch d'Opht., 1882); An Iris Anomaly (Klin., Mon. Bl., 1866); Sympathetic Ophthalmia (Ibid., 1883); Operation for Trichiasis (Ibid., 1897); An Injury to the Eye (Centbl. f. Augen., 1889); Foreign Bodies in the Orbit (D. Z. f. Chir., XXIX).—Cent. f. p. Augenhlk.—*American Journal of Ophthalmology.*

THERE is an unfortunate confusion in the minds of the people, *i. e.* the heterogeneous mass of humanity commonly designated "the public," as to the meaning of the words "oculist" and "optician." He will be a public benefactor who succeeds in making every one understand that the oculist is a surgeon, a qualified practitioner of medicine and surgery, who has, or should have spent years in acquiring a special knowledge of his work after having obtained his medical degree; that he is neither a shop-keeper nor a mechanic; but that, on the other hand, an optician is a mechanic neither more nor less, who may have some knowledge of the anatomy and physiology of watches and clocks, but knows nothing of the anatomy and physiology of the human frame, or of the optical problems he undertakes to solve when he proceeds to examine eyes and prescribe glasses. The oculist occupies the same positition in relation to the optician as he does toward the druggist, and has a right to exact the same care in filling his prescriptions from the one as he does from the other. Moreover, he is likely to object to the prescribing optician just as much as he or any other physician does to the prescribing druggist.

There is no reason why the public should not confide the care of their health or their eyesight to unqualified practitioners, druggists or opticians, instead of first seeking medical advice, if they choose to take their chances in this way. The evil in either case tends to correct itself, more often perhaps in the case of the prescribing optician than in that of the druggist; for, as a matter of fact, a very large proportion of persons requiring the use of glasses on account of errors of refraction cannot by any possibility obtain relief except at the hands of an oculist—of one who has the advantage of a thorough medical training and the right to use drugs the action of which is absolutely essential to a complete investigation of the case and of the many complications so often associated with the errors of refraction. Moreover, the optician has no knowledge of the morbid conditions which are often the real cause for seeking relief by the use of glasses. Sooner or later the failure of the glasses to afford relief compels the sufferer to look for other advice, and herein lies the chief danger, as it sometimes happens that the delay is disastrous. Such a case is reported in the Philadelphia *Medical Journal* for March 18, 1899, and many similar ones are to be found in every ophthalmic surgeon's records.

The itinerant optician, however, is the most reprehensible creature of all his tribe. For pure effrontery, impudence and downright knavery he has no parallel. As witness the poor farmers and farmers' wives throughout the length and breadth of the land who have paid their five and ten dollars for gold-mounted pebbles of woundrous virtue, and found themselves in possession of brass fittings to a bad piece of window glass. The number of these dupes is legion. The traveling spectacle vendor commonly assumes some high-sounding title, or, worse than this, pretends to be the agent of some oculist of repute whenever he reaches a locality where that oculist happens to be well known, and the ignorant never fail to swallow the bait. It seems impossible to invoke the aid of the law against these specious swindlers, but if every medical practitioner throughout the country would inform his clients that no reputable oculist ever did or ever will employ an agent to examine eyes and sell glasses, something would be accomplished in the way of preventing this disgraceful method of swindling the ignorant and unwary.

It is a sad fact that physicians themselves—sometimes through carelessness or ignorance—promote the evil by recommending their patients to any one and every one who sells glasses or calls himself an optician.

The intelligent portion of the public are always willing to be guided by the advice of their family physician, but if he be negligent, his influence is more than likely to prove positively harmful. No physician in his right mind would make a practice of sending his patients to a prescribing druggist for advice and treatment. With equal reason he should abstain from sending them to the "Examination Free" optician.

That which is offered to the public free, as a rule, is worth nothing.—*Montreal Medical Journal.*

THE DANGER TO THE EYE FROM LIGATURE OF THE COMMON OR INTERNAL CAROTID.—(Siegrist, *Heidelberg Congress of Ophthal.*, August, 1898.)

S. gives two cases: 1. Ligature of the common and internal carotid for hemorrhage following operation for carcinoma of tongue. Sudden blindness on the side of the ligature presented the feature of embolism of the central artery of the retina, section six days later; ascending thrombosis from the site of the ligature, and extending 6 mm. into the ophthalmic artery. Central artery blocked near its origin by an embolus, the latter being overlaid with a thrombotic mass. The retinal changes concern the inner layers. Infiltration advancing from periphery to center of cornea, with small central ulcer, and peculiar changes in the epithelium.

2. Pulsating traumatic exophthalmos ligature blindness on the same side, embolic in character; five months later atrophy of the papilla; choroidal vessels all visible, partly normal, partly sclerosed; fine pigmentation of the retina. After a year and a half the macular region showed no sclerosis, but still fine flecks of pigment; in the upper part of the fundus the choroidal vessels were completely sclerosed, and the retinal pigment was heaped up in mass around this area.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, NOVEMBER, 1899. NO. 11. NEW SERIES

ORIGINAL ARTICLES.

TWO NEW ASTIGMATIC CHARTS.

BY FREDERICK HERMAN VERHOEFF, PH.B., M.D.

BALTIMORE.

Illustrated.

The two charts that I wish to describe are identical in principle, but differ somewhat in detail, one being designed to determine the axis, while the other is to be used for estimating more especially the amount of astigmatism. The principle upon which the charts are constructed is best illustrated in the latter, Fig. 1. This consists of a disk pivoted through its center to a flat board upon which degrees are marked off so that the disk can be rotated any number of degrees desired. Lines are drawn upon the disk as illustrated in the diagram; the two wide lines at right angles to each other are to be compared by the patient, the disk having been so rotated that one of these lines corresponds to the axis of astigmatism.

It is evident that if one of the wide lines appears more distinct to the astigmatic patient, the fine lines at right angles to it will appear blurred, while at the same time the fine lines at the right angles to the less distinct of the two wide lines will appear comparatively sharp. In this way the apparent difference in distinctiveness between the two wide lines is increased, since the sharp line is made to appear still sharper by contrast with its more or less uniformly blurred background, and the blurred line appears still more blurred because of the fine lines at right angles to it having become distinct. In effect, it seems as if the blurred wide line were hidden behind the sharp fine lines.

Another advantage of the fine lines is due to the fact that while they exaggerate the apparent difference in distinctness between the two wide lines, they also decrease the total amount of light reflected from the chart, thus rendering the latter less fatiguing to the eyes. The fine lines are an additional advantage in that astigmatism of low grade may be estimated by having the patient confine his attention to them and ascertaining which pair of quadrants are the more distinct. In this way, too, after the amount of astigmatism has been determined by the aid of the wide lines, it may be confirmed by the fine lines.

Fig. 1

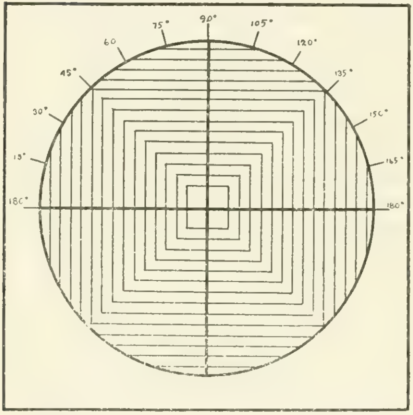
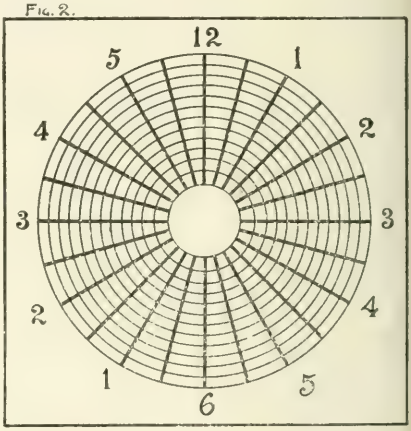


Fig. 2.



The chart for determining the axis of astigmatism, Fig. 2, requires little explanation. The circumferences here produce much the same effect as the fine lines in the other chart. In labeling the lines, I prefer very large Arabic numerals placed opposite alternate lines as shown in the diagram. This renders it easy for the patient to read the numbers even when they are very much blurred.

The axis of astigmatism may also be determined by the chart first described. This is done by suitably blurring the lines by means of a convex lens or its equivalent, and then rotating the disk back and forth until the more distinct of the two wide lines reaches a position at which it appears most distinct to the patient. Another method is to rotate the disk until the two lines appear equally distinct. The axis will then lie half way between the two lines. Both of these methods are often very accurate and should never be omitted, at least as confirmatory tests. The latter method, so far as I know, has not previously been described.

It is a mistake, I think, to make the lines on astigmatic charts so narrow as to subtend the visual angle of 1' as Green* and later, Wallace† have done. Green gave no reason for doing this, while Wallace did so simply because he thought the lines should be made upon the same principle as test letters. Test lines, however, are used in a different way from test letters and I cannot see how any relation can be established between them. The object to be attained in charts is to have the lines so constructed that for a given amount of astigmatism there will be the greatest possible apparent difference in distinctness between them. Moreover, this difference in distinctness must be due as far as possible to astigmatism alone.

It seems to me that the width of lines must be decided upon for the most part by experimentation, but provided that slight differences in distinctness can still be made out in them, the wider the lines are the better, since wide lines when blurred do not show the effect of positive or negative aberration so markedly as narrow lines. A not unimportant objection to the use of narrow lines, lies in the fact that when they are blurred to an extent sufficient to place them surely out of reach of the accommodation, all become so indistinct as to render it impossible for the patient to recognize any differences among them when the astigmatism is of low grade or is partially corrected. Where a cycloplegic is used, this objection, of course, does not apply.

On the other hand, if the lines are too wide, it is equally difficult to judge of the variations in distinctness due to low grades of astigmatism. To get the maximum effect, the lines should be varied in width according to the amount of astigmatism, but practically, of course, it is only necessary to construct lines suitable for low grades of astigmatism, since high grades produce sufficient apparent differences no matter what the width of the lines.

In most astigmatic charts the test lines consist of three stripes. This I consider disadvantageous for the stripes are so close together that the blur from one stripe may at times reinforce, as it were, the blur from the others, thus giving an appearance of distinctness which may be very deceptive when it comes to estimating the relative distinctness of the lines on the chart. It is for this reason that I have placed the fine lines on the charts so far apart.

*Transactions American Ophthalmological Society, 1869, page 131.
†University Medical Magazine, Philadelphia, 1889-90, II, 13-15.

In the two charts described above, I have adopted the following measurements: Width of wide lines, 3.75 mm.; width of narrow lines, 1.1 mm.; distance between narrow lines, 6.5 mm.; diameter of disk, 31 cm. The chart for determining the axis of astigmatism should be as large as it conveniently can be made. The charts are to be viewed at twenty feet, the usual distance.

These charts may be obtained from E. B. Meyrowitz, New York.

1707 Fairmount Avenue, Baltimore, Md.

THE REPORT OF A CASE OF KERATECTOMY.

BY CHARLES W. KOLLOCK, M.D.
CHARLESTON, S. C.

In March of the present year a dark-colored mulatto woman consulted me about a troublesome protrusion on the left cornea. It occupied the upper inner portion and extended from the cornea-scleral border down and out below the pupillary area. The eye was painful and irritable, the latter condition being probably due to the protrusion of the ectasia between the lids. An iridectomy was first performed to relieve the tension, which was slightly increased, and considerable pressure was made with a roller bandage and compress for the purpose of forcing back the bulging cornea. Nothing was accomplished by this treatment. It was then decided to excise a portion of the staphyloma so that when the edges should be brought together, the general corneal area would be but little if any reduced. This was done and about a millimeter of the protruding part was left above the base. The iris was torn away with the excised corneal tissue and the lens also came out. The edges of the opening were brought together with silk sutures and the whole reënforced and protected by drawing the conjunctiva, which had been dissected for four or five millimeters from the corneal border, over the entire cornea and uniting it with the purse-string suture as advised by De Wecker in treating extensive wounds of the cornea. Healing was without complication, the conjunctival suture cut through at the end of the week and this coat retracted to its normal position. The corneal wound was thoroughly united and the contour of the cornea was the same as that of the sclera. The corneal area had not been much diminished, the ball was of course less prominent, but by no means unsightly, and was free from irritation and pain. There has been no tendency to bulging at any point since the operation.

The chief objection to operations of this kind has been that the sutures were placed in or near the ciliary region and caused either a cyclitis or sympathetic inflammation of the fellow eye, or both. In order that these dangers may be obviated the sutures should be placed entirely in the corneal tissue, and even in cases where the entire cornea is involved in the protrusion a sufficient space should be left for the sutures which not only insure safety from ciliary inflammation, but also leaves a more sightly globe. The cornea is always stretched in these cases and a considerable portion may be excised and yet enough left to make the area about the same as before. Protecting and reënforcing by the conjunctiva is also of undoubted advantage.

EMPHYSEMA OF LIDS FOLLOWING FRACTURE OF THE INNER WALL OF THE ORBIT FROM A FIST BLOW.*

WENDELL REBER, M.D.
PHILADELPHIA, U. S. A.

Illustrated.

Fracture of the walls of the orbit may be either direct or indirect, and may be caused by blows or falls upon the head or face, and by gunshot or other penetrating wounds of the orbit with or without the lodgment of a foreign body. Fractures of the inner wall of the orbit may occur alone or in connection with fracture of the other walls. If the diagnosis of direct fracture cannot be made by determining displacement of the lacrimal bone from the orbital plane of the ethmoid, much light will be thrown on the diagnosis by the appearance of hemorrhage from the nose and emphysema of the lids or anterior orbital tissues. Such conditions, however, are usually due to blows of no little violence, and are generally easy of detection.

The two histories here recited are therefore of some interest, in that fracture of the inner orbital wall was directly caused by a fist blow, in that there was no complication, and in that the emphysema was limited to the lids.

CASE I.—Q. M. D., aet. 26, colored, a waiter by occupation, came to the Polyclinic Hospital April 19, 1898, stating that the previous evening, while scuffling with a friend, he was struck a pretty sound blow in the right eye. He thought nothing of it at the time, and applied cold water liberally, but two or three hours later, just before going to bed, he noticed blood trickling from his right nostril, and he blew his nose, whereupon the lids of the right eye immediately snapped shut and puffed out. He came under observation the middle of the next day, when the left eye was found normal in all respects. The lids of the right eye were tense, swollen, and so tightly closed that some effort with the fingers was necessary to expose the eyeball, which was intact. Vision was 5/6 in both eyes. There was no pain, either spontaneous or on pressure, save directly over the inner canthus. The feeling of crepitation so characteristic of emphysema could be elicited all over the distended lids, but there was no anesthesia anywhere in the area of distribution of the inferior maxillary division of the fifth nerve. A small deposit of effused blood showed under the skin near the inner canthal end of the lower lid.

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*Presented to the Northwestern Medical Society of Philadelphia, Tuesday, March 7, 1899.

The treatment consisted of a firm pressure bandage and strict injunctions not to blow the nose. When the bandage was removed four days later there was not even a trace of the emphysema, nor was there any recurrence of the condition later on.

Case 2.—A. C., aet. 21, single, a molder, came to the Polyclinic Hospital February 23, 1899, saying that three hours before he had an altercation with some roughs who had been making him the target for loaded snow balls. During the fistic encounter he was struck from behind by one of his assailants, who reached around the left side of his head and "landed heavily on his left eye." Cold water, arnica and witch hazel were applied to the parts for an hour or so when, as in the preceding case, the trickling of blood from the left nostril induced the patient to blow his nose, whereupon the lids of the left eye closed with a snap, and he found that he couldn't voluntarily open the eye.

In great alarm, he presented himself at the hospital, with a sound right eye and terrific distension of the lids on the left side. Crepitus was everywhere noted over the distended area, but pain was not complained of except when pressure was made over the inner canthus. There was no escape of blood under the skin, and careful examination of the whole orbital rim showed it to be intact; neither was there any depression of any of the facial bones, or any anesthesia in the area presided over by the infraorbital branch of the fifth nerve. Forcible exposure of the globe revealed a sound eye with vision of 5/5 and a normal eyeground. Half an hour later the emphysema had somewhat subsided, and I requested the patient to again blow his nose, to which he demurred; but when I reassured him that the tension of the lids so produced could soon be

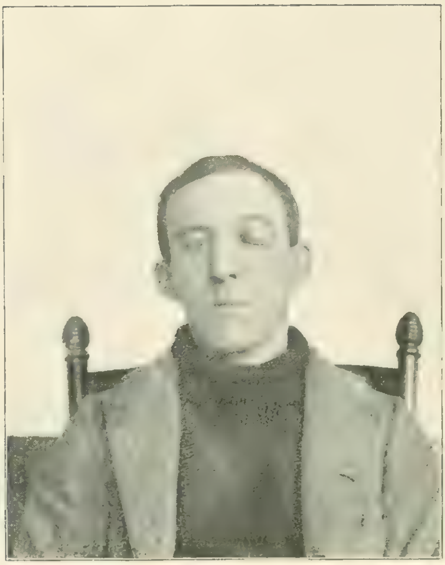

Fig. I

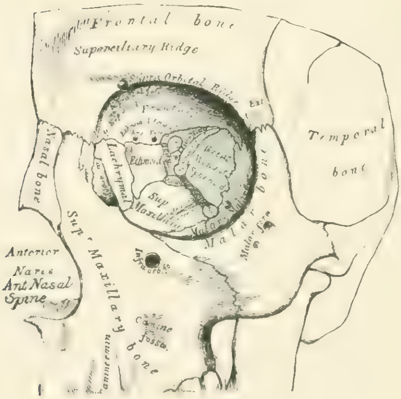
Frontal bone
Superciliary Ridge
Supra Orbital Ridge
Ext
Frontal
Ethmoid
Lachrymal
Sup Maxillary
Malar
Nasal bone
Temporal bone
Malar bone
Malar for
Anterior Nares
Ant. Nasal Spine
Sup. Maxillary bone
Infra orb. fo
Canine fossa

Fig. II.

dispelled, he blew a loud long blast, filling his left eyelids out as tight as a drumhead, and I had him photographed at that moment. (Fig. 1.)

As in case No. 1, the treatment consisted in a pressure bandage and no nose blowing, and in three days no inflation of the lids could be produced by the most vigorous attempts at blowing the nose.

It will have been observed that the symptoms were practically identical in these two cases. The presence of nose bleed and strictly localized emphysema, the absence of any complicating fracture, the absence of pain on deep pressure everywhere except directly over the internal canthus, the absence of any break in the orbital margin, and of anesthesia in the provice of the infraorbital branch of the fifth nerve, all point to a fracture of the inner wall of the orbit involving either the lacrimal bone alone or producing separation of the lacrimal bone from the orbital plate of the ethmoid bone.

Reference to Fig. 2 (or careful examination of inner orbital walls of a perfectly dried and bleached cranium), will show that only at one of these two points would fracture from a fist blow be likely to occur, and the symptom complex presented by the two above cases be entirely and satisfactorily explained. Such conditions following upon fist blows are doubtless of greater or less frequency, but they are seldom considered of sufficient scientific interest to justify report of them.

1208 Spruce Street.

INTRAOCULAR HEMORRHAGE FOLLOWING CATARACT EXTRACTION, WITH RECOVERY OF USEFUL VISION.

BY JAMES MOORES BALL, M.D.
ST. LOUIS.
Professor of Ophthalmology in St. Louis College of Physicians and Surgeons, Oculist to the St. Louis City Hospital, the Jefferson Hospital and St. Joseph's Sanitorium.

Intraocular hemorrhage following cataract extraction is a serious, but fortunately, rare condition. I have had one case of profuse hemorrhage which came on four hours after the extraction, and caused loss of the eye. The case which I wish to report to-day is as follows:

Mrs. C. B., widow, German, aet. 64, was sent to me by Dr. James A. Close, of St. Louis, on November 14, 1898. Patient has a mature cataract in right eye and an unripe lens in left eye. A preliminary iridectomy was made November 19th on right eye. The eye did well, and on March 1, 1899, I extracted the lens under chloroform anæsthesia. It was thought best to employ a general anesthetic on account of the nervous condition of the patient.

The patient did well, and on the fifth day was able to count fingers at six feet. The evening of the fifth day the patient became very much excited during a conversation with relatives concerning money matters. During the night she was awakened by a violent pain in the operated eye. This pain continued for two hours. I was not informed of her condition until the next morning. The eye was red, painful, and the anterior chamber filled with blood. Small amount of blood from the conjunctival vessels near the wound had soiled the dressings. Light perception was lost. I felt that the condition was a most serious one, and gave an unfavorable prognosis. The patient was kept under sedative and alterative treatment by her family physician. Atropine was used locally and the eye bandaged. Absorption of blood took place slowly, and light perception returned. An examination made several weeks after the occurrence of the hemorrhage showed a thickened posterior capsule, normal fundus reflex, and vision equal to ability to count fingers at one foot. Vision continued to improve, and on June 11th the posterior capsule was cut with the knife needle. June 19, 1899, glasses were ordered: R. E. = + 11.00 $\bigcirc$ + 2.00 axis 180°. With these, vision = 15/40. With proper lens the patient is able to read Jaeger No. 5.

The hemorrhage in this case came from the corneo-scleral region. That it was due to increased action of the heart, stimulated by excitement, is my belief. It shows that complete recovery can follow a serious bleeding into the eye, and nullifies the teaching of a recently published text-book on ophthalmology, whose author advises that in intraocular hemorrhage the wound be opened and the eye flushed with bichloride solution.

3509 Franklin Ave.

PIECE OF GRANITE IN POSTERIOR CHAMBER, FOURTEEN DAYS: INTENSE PAIN, AND SEVERE INFLAMMATION: WITH SCANTY DISCHARGE OF PUS: ENUCLEATION.

BY C. C. STEPHENSON, M.D.

LITTLE ROCK, ARK.

June the 7th last, Joseph W., age about 30, laborer, while working in a granite quarry, some twenty miles west of this city, was struck in his left eye by a piece of flying granite, which was liberated and sent through the air at a terrific speed, by a powerful blow struck with an iron maul by a fellow laborer. Loss of vision resulted at once, followed by excruciating pain. His companions, after examining him, went to their camp and prepared the usual "Tea leaf poultice," and applied to the wounded eye, and concluded to send him to an oculist the next day. Late in the afternoon, June 8th, about thirty-six hours after receipt of injury, he was brought to my office for examination and treatment.

Examination revealed an incised wound across the cornea, directly over the pupil, and running in a horizontal direction, beginning in the sclerotic, about two mm. from the limbus, on the outer side, and ending one mm. from the limbus, in the cornea. The anterior chamber was filled with blood and clots, which caused some gaping of wound. All conjunctival vessels were congested, and photophobia was present in a marked degree. The eye was cocainized, and an unsuccessful effort was made to remove the foreign body, and clear out the clots; not enough, however, could be removed to admit of an examination with the ophthalmoscope. The patient was of the opinion that there was no foreign body in his eye, which fact may account in a measure for his waiting so long (thirty-six hours) before consulting an oculist. His eye was made as near aseptic as possible, and a six-grain solution of atropia, combined with a ten-grain solution of boric acid, was instilled. He was directed to repeat this every six hours, and to use enough of a four per cent solution of cocaine to make the eye comfortable. An unfavorable opinion was given, and enucleation suggested, if favorable symptoms failed to present in proper time. He objected to this violently and protested against any radical procedure. Twice daily he visited the office till the thirteenth day, and although the inflammatory action was severe (panophthalmitis), and his sufferings intense and continuous only when relieved by one to two teaspoonful doses of papine (Battle & Co.) which I had to begin giving him on second day after his arrival, still there was practically no pus discharging from wound, which was as yet ununited, although there was a constant oozing of the aqueous, which (I failed to mention) began at once, after reception of injury. I advised and insisted on an enucleation on fourth day, but could not obtain his permission to operate.

His treatment throughout was atropia, boric acid, cocaine, with some bi-chlor. occasionally, instilled in a 1-5000 solution, cold applications and eye bandaged and papine sufficient to relieve pain. He persistently refused to part with his eye till the fourteenth day, when pain became so unbearable he told me, if I still thought the piece of rock was in his eye, he wished I would take it out. Accordingly Dr. W. H. Miller was requested to administer chloroform, and the patient was anesthetized, and the eye enucleated without trouble, except, I might mention, a partial collapse, occasioned by escape of vitreous through unhealed wound. The eye was opened, and a thin, flat piece of stone, about the size of an ordinary finger nail, and weighing probably fifteen grains, was found sticking tightly in the tunics. Large areas of the discolored membrane was plain, but no pus—only the slightest amount in edge of wound—could be found. I forgot to say, a severe iritis was present from the third day. A rapid recovery followed, with no untoward symptoms.

The point worthy of notice in this case was, the severe inflammatory action, accompanied by the most excruciating pain, and yet: only the slightest amount of pus visible. I am aware of the continued tolerance of foreign bodies in the eyes for years, but I am unable to find any record of a foreign body in the eye, with such decided pain and inflammation, without some suppuration: more than in this case, which I am sure would not equal three drops all told. Wilde reports a case that carried a piece of stone in the eye fourteen years, which he removed. Taylor (1878) in *Virginia Medical Monthly*, reports the removal of a piece of bone from the eye, which had remained quiescent fourteen years. Williams in 1881 records in the *Boston Medical and Surgical Journal* the continued toleration of foreign bodies in the eyes, from fifteen to twenty-two years. Critchett (Paris) relates an instance of a foreign body lying loose in the anterior chamber for fifteen years. While Rider (1872), in the transactions of the Medical Society of the State of New York, reports the retention of a piece of percussion cap back of the inner ciliary margin of the iris for thirty-five years. Bartholinus, Jacob, Lowe, Clark, Trionen and Smyley, all report similar instances. Snell, however, gives an account of a piece of steel, which was imbedded close to the optic disc with retention of sight, and was plainly visible with the ophthalmoscope eighteen months after reception of injury. (See report of Royal Ophthalmic Hospital, London, page ix, part iii.) While the above reports tend to show an indefinite degree of toleration of foreign bodies in the eyes, still we are left somewhat in the dark concerning the formation and discharge of pus (if any) in these cases.

I confidently expected more pus than was present, and was surprised at the scanty supply, when considered in connection with the outlined manifestations as given.

Masonic Temple.

A CASE OF ONE-SIDED ALBUMINURIC RETINITIS.

L. W. DEAN, M.S., M.D.

Professor Physiology University of Iowa and Ophthalmic Surgeon, Iowa College for the Blind.

IOWA CITY, IOWA.

On May 16, 1899, Miss S—— consulted me about her eyes. The history of the case is as follows: Patient's age is 20. Father and mother still living; one sister older than herself still in good health. She has had no other brothers or sisters. The patient said that about five weeks before she began to lose the sight in her left eye she did not pay very much attention to it until several days before, when on closing the right eye she discovered she was blind in her left. Her right eye has never bothered her. During childhood she had the ordinary infectious diseases, measles, scarlet fever and whooping cough; so far as she knows she has had no nephritic trouble with any of these. During the last ten years her health had been perfect up to six weeks before. Then she noticed occasional headaches, which she had never had before; she now complains of severe headaches and general weakness. There is no history of swollen feet or œdema of the eyelids.

The patient was five feet five inches tall. Weight 125 pounds. The body was well nourished; skin pale. No œdema or ascites. The apex beat of the heart was in the mammary line; right boundary to the middle of the sternum; sounds clear; lungs and abdominal organs apparently normal. The nervous system was very carefully examined, and no disturbance of function was found.

The examination of the urine was made by Mr. Teeters, Instructor in Chemistry in the University. His report is as follows: Total amount of urine in twenty-four hours, 810c; reaction, acid; specific gravity, 1.032; indican, moderate test; urea, 2.4 per cent; no bile; no sugar. Total amount of solids in 1000cc, 69.90 grammes. Albumen a little less than 6.1 per cent. The sediment consisted of epithelial cells and a very large amount of calcium oxalate crystals, the octahedral form.

The examination of the eye showed O. D. V. = 6/6, O. S. V. = fingers in 2m. The fundus of the right appeared to be normal. The fundus of the left eye was so characteristic as to immediately suggest the diagnosis of albuminuric retinitis. In the macula were three silver-white exudates, each one appearing about one-half the size of a pin head. Radiating from these spots were a series of elongated exudates with a yellowish tinge. Only the macular region contained exudates. The disc was swollen, indistinct. The veins were slightly enlarged, and the whole fundus covered with small linear hemorrhages.

The case has now been under observation and treatment for about seven weeks. In the general condition of the patient there has been but little change. Vision in the right eye is still 6/6. In the left eye V — fingers in 4m., a slight improvement on the vision seven weeks before. The fundus of the right eye still shows no apparent change. In the left eye most of the hemorrhages have disappeared. The disc is not so much swollen and is more distinct. A large number of pin point exudates have appeared above; below and to the temporal side of the cartwheel macular exudates. These exudates made their appearance first at the temporal side of the macula, then above and below it. As yet there are no exudates at the nasal side of the disc. The urine of the patient has been tested from time to time, and always an abundance of albumen was found.

Because of the constant albuminuria, the characteristic retinal changes, the symptoms of uræmia, together with the absence of any apparent disturbance of the central nervous system, a diagnosis of one-sided albuminuric retinitis was made.

SERPIGINOUS SYPHILIDE OF EYELID, FOREHEAD AND EXTERNAL NOSE.*

BY H. V. WÜRDEMANN, M.D. AND W. R. MURRAY, M.D.
MILWAUKEE.

Illustrated.

The following case history is related on account of its resemblance to lupus, for the difficulty of diagnosis, the primary error of observation and to show the rapid improvement following appropriate treatment:

W. R., male, age 23, occupation hotel waiter, presented himself for examination Nov. 19, 1898, with a large ulceration of the left upper eyelid and temple.

Personal history: Patient stated that he had always been in good general health with the exception of diseases of childhood; denied any specific infection; six months previously he had been struck on the left eyelid and temple producing a bruise, which a short time afterward broke

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* Discussed at Meeting of the Milwaukee Medical Society, April 4, 1899.

down, resulting in an ulcer; this had been treated by ointments, scraping, cauterization, etc., by two other physicians. "Internal medicine" had likewise been given. About one week before examination he had received a blow upon the forehead. No reliable family history could be obtained.

Patient somewhat anemic; no evidence of specific disease on body; lungs, heart and kidneys sound. On the forehead there was a fluctuating reddish swelling, presumed to be a cold abscess. The skin of the left upper lid with the exception of the ciliary margin was entirely destroyed; the ulceration extending to the left temple, the destruction involving all the layers of the skin down the fascia. The edges of the sore were indurated and excavated, but showed no evidence of cicatrization. The right wing of the nose was involved in ulceration of the same character, extending into the nostril. Microscopic examination of scrapings from the ulcer showed granulation tissue; examination of a number of slides for tubercle bacilli was negative. At the time of this examination a diagnosis of lupus with secondary infection of the nose, probably from picking with finger nails, was made. Patient was given bichlorid of mercury internally, ointment of pyrogallic and salicylic acid locally, and returned to his home in Iowa. When he came back one week later, there was considerable improvement. The ulcerations at the nose, eyelid and temple were curetted and thoroughly cauterized with the Paquelin cautery; the cold abscess, which was now prominent, was opened and tincture of iodin injected. On January 30 under chloroform anesthesia, a second curettment was done, followed by implantation of Thiersch's skin grafts. Tonics were given. Marked improvement occurred; the upper lid, one week later, being entirely healed, but shortly afterward the tissues again broke down.

February 15th the condition of the patient was far worse than on the first examination, there being at this time a large ulcer covering the greater part of the left upper lid and the temple: that of the temple being kidney-shaped, the upper part the size of a half dollar, the lower that of a quarter. There was no attempt at healing in the ulceration on the forehead, it being the size of a half dollar, the edges hard and indurated (see figure). The right wing of the nose, the floor, a portion of the right nasal septum was one large ulcer, the nasal passage filled up with crusts. This being on the opposite side, does not show in the photograph.

A consultation was then held with Dr. L. F. Frank (the dermatologist). The patient was put upon ascending doses of Kalium iodid, commencing with 15 drops of the saturated solution three times a day, increased until at the end of two weeks, he was taking 120 drops at a dose three times a day. The ulcerations were treated with antiseptic washes and resorcin ointment locally. Rapid improvement followed, resulting in complete restoration of the tissues of the lid and nostril and of the forehead in three weeks.

The cicatrices have the characteristic syphilitic look and a diagnosis of his previous condition may now be readily made. However, at our first examination and during the time while the destructive process was extending rapidly at the periphery, all three ulcers seemed to be the result of local infection, and did not present the usual characteristic cicatrization of specific ulceration. That of the eyelid and temple followed upon distinct traumatism. The lesion on the forehead first arose from a bruise, the tissues then broke down, forming a cold abscess; this refused to heal under local antiseptics. That of the nose was distinctly the result of picking by the finger, and the local infection might readily have been carried thence by the hands, from the ulceration in the region of the eye. There was no other evidence of specific disease visible and no history of primary or secondary lesions could be obtained. Internal treatment by mercury gave no result; improvement at first followed local treatment and the operations; all these points apparently proved that the disease was non-syphilitic. The characteristics of the ulcer were thus apparently those of tuberculosis of the skin, although microscopic examination failed to reveal bacilli, scrapings of the ulcers showing only broken-down granulation tissue. Despite all these facts, the healing of the ulcers, the characteristic cicatrization and the improvement in general health, in the course of a few weeks after the exhibition, of large doses of iodid of potash, certainly prove the local lesions to be deep serpiginous syphilides.

128 Wisconsin Street.

CASSARIPE IN CORNEAL SUPPURATION.

JNO. A. DONOVAN, M.D.

BUTTE, MONT.

This remedy being fully described by Dr. S. D. Risley, of Philadelphia* I shall simply add one case to illustrate its comparative value.

May 24, Mr. J. J. W., miner, age 48, referred to me by Dr. H. J. McDonald with some quartz in left cornea, which I with difficulty curetted out, and gave him a sulphate of zinc in boracic acid solution, and 10 per

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**Philadelphia Medical Journal*, Oct. 29, 1898.

cent orthoform ointment for the pain, so common after corneal lesions obtained in these mines.

I lost sight of him for ten days, when he returned with a severe ulcer, iritis, etc. I used hydraulic curetting with stream of corrosive sublimate 1-1000 several times, as recommended by Dr. Pleasants of Helena, and used by myself on other occasions successfully. Then later I used sharp curette, followed by pure carbolic acid three times and tincture of iodine several times, repeatedly opening the cornea to evacuate the pus, and using iodoform freely. July 3, I used 10 per cent ointment of cassaripe three times; next day I let the pus remain, as there was less pain; continued the cassaripe. July 5, he had six hours sleep for the first time without anodynes, and two days later pus was gone and pain entirely disappeared. I later increased its strength to 15 per cent, then to 20 per cent, and dusted the ulcer daily with xeroform to stimulate it. At present, August 14, eye is well and patient at work, though still a cupping in the spot, but transparent, and apparently slowly getting smaller. I have received satisfactory results in others; in one it seemed to aggravate the pain, but am pleased on the whole with results.

RELATIVE FREQUENCY OF IRITIS IN SYPHILIS AND RHEUMATISM, OBSERVED IN THREE THOUSAND CASES.*

RANDOLPH BRUNSON, M.D.
HOT SPRINGS, ARK.

These statistics are gathered from the records of four of my medical friends in the general practice of medicine at Hot Springs, together with my own. Each record book was taken separately, and in those cases where the diagnosis was made either of syphilis or rheumatism, they were noted, and then the histories were carefully gone over to ascertain whether iritis had occurred in either disease. This was done until 1,500 cases of each disease had been found. One serious objection may be made as to the reliability of these statements from the fact that the cases of iritis in the histories were not always seen by the gentlemen who had recorded them, as in many cases it was only "history," and not a direct observation.

Some time since I had under my care several cases of iritis, both syphilitic and rheumatic in origin, which were coming in with surprising frequency, so it occurred to me to collect as many as 3,000 cases of both to determine the relative frequency of iritis in syphilis and rheumatism.

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*Read before the section on Ophthalmology of the American Medical Association at the fiftieth annual meeting, Columbus, Ohio, June, 1899.

I had never looked up the statistics on the subject, so went into the work without prejudice, and as a result have the following to report:

SYPHILIS.

In series No. 1 iritis occurred 3 times in 111 cases.
In series No. 2 iritis occurred 12 times in 86 cases.
In series No. 3 iritis occurred 14 times in 558 cases.
In series No. 4 iritis occurred 11 times in 478 cases.
In series No. 5 iritis occurred 8 times in 267 cases.

Making a total of 48 cases of iritis in 1,500 cases of syphilis, which is a little more than three per cent of the entire number of cases examined.

RHEUMATISM.

In series No. 1 iritis occurred 1 time in 160 cases.
In series No. 2 iritis occurred 2 times in 127 cases.
In series No. 3 iritis occurred 4 times in 279 cases.
In series No. 4 iritis occurred 7 times in 408 cases.
In series No. 5 iritis occurred 9 times in 526 cases.

Making a total of 23 cases of iritis in 1,500 cases of rheumatism examined.

Thus we find iritis was present in about one and one-half per cent of all cases of rheumatism.

Since compiling these statistics I find that the percentage in my cases of iritis in syphilis and rheumatism is about twice as great as most authorities have given. However, I give them to you for what they are worth, and can only say that I have been conscientious and most careful with the data I had at hand.

It is my belief that if active heroic treatment is administered to a patient when the initial lesion is first seen, iritis will not occur once in 500 cases of syphilis.

At the suggestion of our able chairman I will endeavor to give the clinical differentiation between iritis caused by rheumatism and iritis caused by syphilis. This point is unquestionably the most important factor with which we have to deal in cases of iritis, for the simple reason that if we can arrive at a correct etiologic diagnosis from the pathologic appearances of the iris in those cases where the history is obscure, we will at once know the line of treatment necessary to bring about the desired results, and will not have to wait for the medicines administered to determine the diagnosis. Again, it is of paramount importance to recognize the etiology of the disease in order to save the patient from the distressing synechiæ which will frequently follow in spite of the instillation of atropine.

Unfortunately, however, we cannot always determine the etiology of iritis from the clinical appearances, as there are a certain number of cases in which the clinical aspect will not give any indication of the constitutional cause of the inflammation; so, after all, we are more or less dependent on the history of the case and other data to confirm our diagnosis.

In syphilis there are certain characteristic signs in a given number of cases which will allow us at once to recognize the etiology of the disease, the most palpable of which are the papules, small raised masses embedded in the iris, usually not exceeding three in number, and generally located in the pupillary zone, but may be seen at the periphery of the anterior chamber or elsewhere.

They begin as small points, increasing in size until finally in a few cases may attain such size as to touch the posterior surface of the cornea. During this time their color changes from a reddish brown to a lighter shade, and on close inspection we will find numerous small vessels surrounding them. They may disappear completely, or leave a small arch-shaped synechiæ.

A white line is not infrequently seen at the bottom of the anterior chamber. This is due to the accumulated debris of broken-down condylomata. At the pupillary edge of the iris a rusty hue is observed sometimes, and is probably due to condylomatous masses diffused throughout the tissues in that position. The posterior synechiæ in this form of iritis are suggestive of the etiology of the trouble, as they are broad and dark in color, thus differing materially from those of rheumatism, which are thin and very light in color.

Typic symptoms of rheumatic iritis are intense photophobia, lachrymation, and ciliary redness, together with pain, which is liable to assume a paroxysmal type, and is so severe and sensitive that the patient cannot at times tolerate the weight of a feather in the region of the eye. The pain radiates into neighboring parts, such as the forehead, scalp, cheek, etc. The iris shows no structural change, as the effusion of lymph is not very great. Of course, condylomata are never seen, and posterior synechiæ when present are long, pointed, thin, and rarely pigmented. Pigmentary deposits on the anterior capsule of the lens are seldom seen. The pupillary border of the iris is very often fringed with a narrow grayish band of lymph.

As a general rule we may accept the following table to differentiate between iritis caused by syphilis, and iritis caused by rheumatism:

RHEUMATISM.

1. History of acute or chronic rheumatism, or some evidences of uric-acidæmia.
2. Photophobia, lachrymation, and pain well marked.
3. Condylomata never observed on iris.
4. Iris often very bright.
5. Exudative changes slight.
6. Posterior synechiæ long, thin, and not pigmented.
7. Very little tendency to formation of pigment on the anterior capsule of lens.

SYPHILIS.

1. History of syphilis either acquired or hereditary.
2. Photophobia, lachrymation, and pain not well marked.
3. Condylomata present in every case.
4. Iris often very dull.
5. Exudative changes very extensive.
6. Posterior synechiæ short, broad, and pigmented.
7. Very marked tendency to formation of pigment on anterior capsule of lens.

In my experience with this class of patients, will state that I do not agree with most authorities on the subject in regard to the absence of chorio-retinitis in rheumatism, as I have seen this complication occur many times in rheumatic iritis.

REPORT OF A CASE OF REMOVAL OF STEEL FROM THE EYEBALL AND EXHIBITION OF A NEW PORTABLE ELECTRO MAGNET.*

BY WALTER B. JOHNSON, M.D.
PATERSON, N. J.

Illustrated.

Mr. R. J., 41 years old, a laborer, of Boonton, N. J., was referred by Dr. J. L. Taylor to my service at St. Joseph's Hospital, Paterson, N. J., on October 13, 1898. He stated that while standing in the shop at a distance of six or seven feet from another workman, who was striking a cold-chisel with a hammer, he felt something strike his eye. He did not experience much pain, but had a sensation resembling the falling of a cloud or curtain before the eye.

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*Read at the January, 1899, meeting of the section of Ophthalmology and Otology, New York Academy of Medicine.

In the evening upon the same day on which he was injured his eye was first examined. On the upper third of the cornea near the limbus there was a penetrating wound about 3/16 of an inch in length, and nearly horizontal; at a corresponding point on the iris, there was a linear aperture of equal size and shape, the lens was injured, and the anterior chamber was almost filled with blood; a magnet operation was considered advisable; the eye was cocainized. When the short end of the magnet was placed in apposition to the corneal wound the pupil was distorted and the iris pressed forward, evidently by the pressure of the foreign body. It was not considered desirable to persist in the effort to draw the steel through the wound at the point of entrance, or to enlarge the opening to facilitate its removal, in consequence of the danger of injury to the eyeball in the ciliary region. An incision one-quarter of an inch in length was made through the conjunctiva and sclerotic behind the ciliary region, and below the insertion of the external rectus, after applying the short end of the magnet to the aperture without success: the long end was passed through the opening into the globe. After several efforts the piece of steel was removed on the long end of the magnet, the foreign body was held firmly by the lips of the wound, and could not be withdrawn until the magnet was rotated.

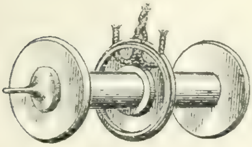

FIG. 1.

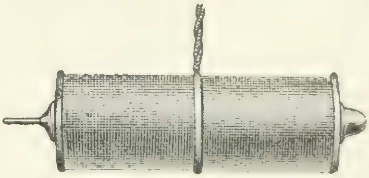

FIG. 2.—JOHNSON MAGNET.

The piece of steel was very thin; it had sharp edges, and was nearly round, measuring slightly over one-eighth of an inch in its longest diameter and one-eighth of an inch in its shortest. The patient did not complain of severe pain during the operation. The subsequent recovery was gradual and uneventful, no pain being present after the first night, during which he complained of headache. There was a mild inflammatory reaction, accompanied by moderate ocular injection, which persisted for about a month, gradually diminishing in intensity. During this time there was considerable swelling of the lens, the pupil was slightly distorted and adherent to the lens capsule.

The patient remained in the hospital for thirteen days. At the time of his discharge he was able to see shadows. He has been kept under occasional observation until the present time. The lens has been gradually absorbed, and the pupil has become nearly circular. There is still considerable discoloration of the iris, and a dense pupillary membrane is present. His visual field is now slightly impaired, especially in its nasal half.

The magnet here presented, which was used for the operation, is portable, and may be used in direct connection with any direct-current Edison incandescent electric-lamp socket, or by the application of the accompanying adapter with any Thompson-Houston socket; or by adjusting the Westinghouse attachment plug it may be used in connection with any Westinghouse socket. It is therefore applicable for use at any place in which a current for direct incandescent electric lighting may be found.

Fig. 1. The core of the magnet is made of the finest grade of soft Norway iron, which is susceptible of the highest possible degree of magnetic saturation. The short and long points of the magnet are adjustable by screw-thread attachment to permit their removal for perfect sterilization. The sample magnet is wound to 140 ohms resistance, with No. 28 single silk-covered magnet wire. One-half of the winding is in one direction when the core is turned in the lathe, and the other half wound in the opposite direction, giving the requisite number of ampere turns. The two halves are coupled in simple series by joining the two bottom wires. The terminals are then joined in the center of the magnet to a ten-foot conduction cord, which is attached to the ordinary Edison plug, and may be adapted to other systems as described above. The only feature in the mechanism or operation of the magnet which is in any way objectionable is a tendency to heat up, if left for too long a period of time, in circuit with the 110 or 120 volt incandescent current. This may be obviated to some extent by turning the current on and off after each application.

A change in the length of the core and size of wire used in the last sample magnet constructed, which is one inch longer and is wound with No. 29 wire to 310 ohms resistance, has increased the time, before the magnet becomes unduly heated, to about twelve minutes.

Fig. 2. The sample magnets were made by J. H. Bunnell & Co., of 76 Courtlandt Street, New York City, and could be sold singly for about $15.

TOTAL SYMBLEPHARON OF THE UPPER LID RELIEVED BY THIERSCH SKIN GRAFTING.

BY F. C. HOTZ, M.D.

CHICAGO.

In the *Annals of Ophthalmology*, April, 1893, I have advocated the use of Thiersch skin grafts as a substitute for conjunctiva for the relief of various conditions resulting from the extensive destruction of conjunctiva. Among the conditions in which the grafting operations had been very serviceable was mentioned extensive symblepharon, which has been, and still is, generally considered a rather hopeless condition. Skin grafting is the only procedure that promises success in these cases, but it requires a great deal of patience and perseverence; and he who expects to relieve an extensive adhesion between lid and ball completely by one operation will often be disappointed. But if he perseveres in the work he will finally be rewarded by excellent results. A very instructive case of this kind was recently reported by Dr. C. H. May.* In this case there was complete adhesion of both upper and lower lids with the globe, as the result of a burn from lime. The first operation restored a perfect fornix of the upper lid. In the lower lid the first operation restored the central half of the fornix; a second and third operation was needed to obliterate strong bands existing at the outer and inner canthi. The patient is able to wear an artificial eye, the lining of the conjunctival surface is smooth and soft, and after almost two years there has been no modification of the good result originally obtained.

Last summer I relieved a similar case by skin grafting, which I deem worth reporting in order to encourage further attempts in this direction. The right eye of the young man presented a symblepharon of both the upper and lower lids, resulting from injuries received in a dynamite explosion in April. The adhesion of the upper lid was nearly complete, a very small shallow pocket of conjunctiva only being left at either canthus. In the lower lid the adhesion was limited to the temporal half, but extended from the border to the fornix. The lid borders were united with the cornea, of which only a very narrow strip was visible, which by

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*Restoration of the conjunctival cul-de-sac in a case of total symblepharon by means of Thiersch skin grafts.—*Archives of Ophthalmology*, March, 1899.

its densely opaque and flattened condition showed that the cornea had suffered irreparable damage. The firm union between the lids and globe precluded all movements, and the constant pulling of the muscles acting in association with the muscles of the left eye caused a great deal of irritation and discomfort in the right eye, and even interfered with the free use of the left eye. On July 7th I relieved the symblepharon of the lower lid under local anæsthesia by dividing the cicatricial bands from the lid border back to the fornix, the dissection being continued until the lid could be easily and completely everted. After sufficiently mobilizing the conjunctiva the edges of the ocular conjunctiva were united by two sutures, and in the same manner the wound of the palpebral conjunctiva was closed. The wound healed by first union, and though a slight contraction subsequently occurred, the result is perfectly satisfactory, inasmuch as the release between lid and ball is complete, and the conjunctival sac is deep enough for the insertion of an artificial eye.

July 24th the symblepharon of the upper lid was operated upon under chloroform anæsthesia. The dissection of the adhesions between lid and eyeball was continued until the ball was freely movable in every direction and the lid could be easily everted. I then cut from a thin sheet of lead an oval disc large enough that when slipped under the lids it would fill the whole space from the retrotarsal sulcus of the upper lid to that of the lower lid, and shaped and molded it so as to fit accurately the curvature of the ball. A Thiersch skin flap taken from the patient's right arm was spread out smoothly over this lead plate, with the epidermis toward the lead, in such a manner that it covered the upper two-thirds of both sides of the plate. Thus mounted, the plate was inserted under the upper lid just as we insert an artificial eye, and then the lower lid was made to slip over the lower part of the plate so that its lower edge rested in the lower sulcus. Finally the lid borders were united by three sutures, and a binocular bandage applied.

The patient felt no discomfort, and the dressing was not disturbed for four days. When, after this time, the bandage and the lid sutures were removed and the lead plate was taken out, the grafted flap was found adherent in its whole extent to the lid surface as well as to the ball. No more bandage, but the lead was worn for four days longer.

Unfortunately the Thiersch flap was not wide enough to cover the whole wound of the eyeball. Around the cornea there was an area of uncovered sclera, and when this wound granulated and cicatrized the ocular portion of the skin graft was gradually drawn forward toward the cornea and pulled the upper border of the lid down with it. The depth of the upper cul-de-sac was considerably shortened by this shifting process, and although an artificial eye could be inserted and was worn ten days without discomfort, I was not fully satisfied, because the artificial eye showed too little motion and had a staring look.

I therefore decided upon a second operation, which was done on August 28th. I made an incision through the grafted skin along the upper tarsal border, and by free dissections mobilized the lid so that when everted its upper border could be easily turned away from the eyeball. There was now a large wound surface between the upper tarsal border and the strip of the graft left on the eyeball. A new skin flap, 3½ by 2 cm., was placed upon this wound, and secured in its position by suturing its upper edge to the upper tarsal border, and its lower edge to the fascial expansion of the tendon of the superior rectus muscle, as recently suggested by Dr. Wolff* (Berlin). This skin grafting was also successful, and though on account of the loose tissue upon which it was implanted the flap shrunk considerably, it served its purpose to deepen the cul-de-sac and allowing the ball a greater freedom of motion. The artificial eye is worn with perfect comfort, looks very natural, and shows by the perimeter a rotation of 20° out and 30° in.

The use of the lead plate for holding the graft in perfect coaptation with the raw surfaces of lid and globe was suggested by the article of Dr. May who used a porcelain shell for the same purpose. I had no such shells at my disposal—they cannot be had everywhere—while we can always obtain a piece of lead which can be beaten by hammering into a thin sheet, and besides I believe such a thin, pliable lead plate adapts itself much better to the curvature of the eyeball. Either appliance is certainly of great value by insuring the speedy and uniform cohesion of the graft to the wound surfaces.

THE IMPORTANCE OF ASTIGMATISM.

DR. ROBERT M. LAPSLEY.

Professor of Ophthalmology, Keokuk Medical College, Keokuk, Ia., etc,

Astigmatism occupies so large a place in the practice of the average oculist that it at once demonstrates its important position. There are some points in astigmatism, however, which are not thoroughly solved. The general teaching, at least in America, seems to be that astigmatism should be corrected fully, and the correction worn constantly. In view of this fact an important question is: What harm is done if astigmatism is not corrected, and does it increase more rapidly when glasses are worn or when not?

*German Edition of *Archives of Ophthalmology*, Vol. 39.

I have been trying to answer that question in my own mind for several years on account of the common inquiries of patients as to whether glasses must be constantly worn or not, and also on account of a number of patients I have seen who have consulted some of the most prominent professors of ophthalmology in the West, and have been told they should wear glasses constantly or rapidly lose their sight, and, in fact, that they should have worn glasses a great many years previously, even though the eyes had been no source of annoyance. I never know how much of this may be a bluff to magnify the great man's importance, and how much of it he actually believes.

The symptoms of astigmatism are so well known, and the various tests also, that we need devote no space to their study.

Astigmatism increases from childhood to middle age. It increases when it is not corrected by lenses, and it also increases when it is so corrected. If it causes any of the symptoms caused by eye strain it should be corrected. It is often demonstrated that astigmatism exists and causes no symptoms. It may then be discovered accidentally in testing large numbers of children, both who complain of the eyes and who do not, or it may only be brought out in examining a presbyope. Such astigmatism may be the cause of "weak eyes" following an illness, and is often brought to notice in that way. If there is no illness it may be latent throughout life. It is this form of astigmatism I want especially to notice.

Patients find about the age when presbyopia begins to show that they do not see well for near-work, and perhaps have a little discomfort. They consult an oculist and astigmatism is found, and patient advised to wear glasses not only for reading but for distance. I will illustrate with a case in point.

CASE I.—January 6, 1899, Mr. A. E., banker, age 43. Several months before seeing me patient had consulted one of the most prominent oculists in the West. He was told that he must wear glasses for distance as well as near-work; if not, serious damage to the eyes would be the result.

Condition of eyes:

R. V. = 15/20 + : 15/15 w. + 0.50 ax. 150°.
L. V. = 15/20 − : 15/15 w. + 0.25 ○ + 0.25 ax. 180°.

Reads Jaeger No. I, best at near-work distances with—

R. + 1.50 ○ + 0.50 ax. 150°.
L. + 1.75 ○ + 0.25 ax. 180°.

Patient objected to wearing distant glasses unless damage to eyes would result if not worn. I advised him that it would be safe to do without them and remain under observation. He left them off and has suffered no inconvenience. In a case of this character it seems to the writer that it is safe to correct the astigmatism for close-work and not for distance when no symptoms are produced by doing without distance glasses.

This case will represent the many presbyopes who have some astigmatism that has never been discovered until age for presbyopia has arrived, or if discovered has given no special trouble before 40 years of age, and the observation of this case and many similar ones leads me to think that a large per cent of these presbyopes need no distance glasses.

The case above quoted was not advised to wear glasses because he had discomfort without them, but on the ground that some impending fate was hanging over him if he did not wear them.

Astigmatism in younger people is of importance in different degrees. We can all quote many cases of marked asthenopic symptoms relieved by cylinders from 0.25 D. to those of greater strength, but even these cases are likely to mislead us. We may correct + 0.25 D. of astigmatism with marked relief, and yet we might have obtained the same relief by some other method, indicating that + 0.25 D. cyl. was not the only means of obtaining relief.

I quote the following as one illustration of what is not uncommon:

Case 2.—June 5, 1896, Miss E., age 19, has complained of eyes tiring easily, and headache after use of eyes for a year or so. Examination under homatropine brings out + 0.50 D. astigmatism ax. 90°, and glasses of that strength were ordered. No further complaint was made after wearing glasses.

July 4, 1898, while I was absent in Europe, patient broke glasses, and as my record could not be found, and she felt she could not wait until my return, she consulted an optician with the result of getting + 0.25 spher. for both eyes, which she wore with the same relief as she did the cylinders.

Along the same line I could also quote cases who have had glasses fitted for asthenopia who were not comfortable until weakened to a glass with no refraction, from which relief was obtained.

I might quote numerous cases where cylinders were of benefit for near-work, and going without glasses for distance caused no asthenopia, but still people affected in this way are not only advised to wear glasses constantly, but are told by some of our most noted men that a terrible fate awaits them if they do not.

I do not question the great importance of astigmatism, as every practicing oculist could quote case after case where great discomfort and inconvenience was dispelled by the use of cylinders; so large a number, in fact, that it would seem that the cylindrical lens is the most important remedy for headache and discomfort of eyes at the present time.

Many patients, though with astigmatism, do not need glasses, and many others need them only for near-work, and what I would like emphasized here is that it is not wise to require all patients with astigmatism to wear glasses constantly.

This matter has seemed an important one to me, as I have known so many instances of patients being greatly alarmed by terrible prognostications if they did not wear glasses constantly. I will state in closing, then, that astigmatism is the cause of much physical discomfort, and that glasses should be worn to the extent of the relief of discomfort if possible, but that it is not necessary, in all cases, to insist on the use of glasses farther than useful either in this way or in the improvement of vision.

CLINICAL MEMORANDA.

ALLEN GREENWOOD.
BOSTON, MASS.

ACUTE TENONITIS (TWO CASES).

The patients were sisters who in the daytime played together and at night occupied the same bed.

Mary, aged 7 years, was first taken ill and on the 19th of November, 1898, complained to her mother that her right eye and the right side of her head were paining her and that it hurt her to move her eye about. That night "she was feverish and fussy." The next morning the mother noticed that the right eye was protruding and that the skin of the lids was slightly red. The family physician was called in and found the following conditions. Marked exophthalmos of the right eye with some redness of the skin of the lids. No chemosis, and only the slightest amount of congestion of the conjunctiva. No discharge. Face flushed and temperature 102° F. The constant application of compresses wrung out of ice water was ordered.

Nov. 20th. Conditions about the same with temperature in P.M. of 101° F.

Nov. 21st. Pain has ceased and the temperature fallen to 100° F.

Nov. 22d. Child perfectly comfortable. Temperature 99° F. Exophthalmos the same.

Nov. 23d. The only symptom remaining is the exophthalmos.

Edith, aged 5 years, began on the evening of Nov. 22, 1898, to complain of the same symptoms of pain about the right eye and went to bed fussy and feverish. The next morning she presented conditions identical with those observed in the case of her sister. The treatment was the same and the disease ran a similar course.

I was called to see them by the physician in charge Nov. 25, 1898, on the third day of the illness of the second case. I found two smiling little girls lying side by side in bed both showing a very marked right sided exophthalmos.

As both cases had passed the acute stage and showed practically identical conditions, one description will answer for both. The exophthalmos amounted to about 7 or 8 mm. and could not be reduced by pressure. Pressure caused some complaint of soreness. The eye could be moved in all directions, but not so freely as the other.

There was no chemosis, but a slight congestion of the palpebral, and ocular conjunctiva was present.

The skin of the eyelids showed a very slight dusky redness, but no swelling. A careful ophthalmoscopic examination showed nothing abnormal or unusual at the fundus or in the media. A few days after my visit the exophthalmos began to diminish and in two weeks' time had entirely disappeared. A careful inquiry into the previous histories in regard to disease or injury threw no light on the cause of the condition. No abnormal nasal or lachrymal conditions could be found. I think I am justified, however, in ascribing them to some acute infection which may have gained an entrance through a slightly impaired conjunctiva. Whether the second child became infected from the same source as the first or by direct transmission from the first I cannot tell.

BILATERAL SPONTANEOUS LENS DISLOCATION.

The subject of this unusual occurrence was an inmate of the Massachusetts School for Feeble Minded. She was 22 years old, and had been in the institution for over 15 years. She was one of the very lowest types of idiots, living simply an animal existence. For more than a year it had been noticed that her general condition had been failing. She was subject to having periods of mental excitement.

On July 14, 1899, one of the attendants noticed that her right eye was inflamed and the clear cornea showed a whitish spot in its lower part.

The next day the white area had increased and the eye had become more inflamed, with the addition of swollen lids and photophobia. On July 17th it was observed that the cornea of the left eye also showed a whitish spot below the pupil, but the eyeball was not inflamed. I first saw the patient July 18th, and found the following conditions. O. D. eyelids inflamed and swollen. Conjunctiva inflamed and marked circumcorneal injection. Cornea steamy throughout. Through the infiltrated cornea there could be seen an opaque lens lying in the lower part of the anterior chamber in front of the iris. It appeared to be about two-thirds the normal size. The small crescent of iris seen through the upper and least infiltrated part of the cornea above the edge of the opaque lens showed a muddy and discolored appearance. O. S. lids normal and cornea clear, with no inflammation of the eyeball. An opaque lens was seen lying in the lower part of the anterior chamber in front of the iris. It was about half as large as normal, and moved when the eye was moved. Pupil clear and iris tremulous. No history of traumatism could be obtained, and there was nothing about the head or eyes to indicate it. A diagnosis of spontaneous luxation was made, the condition evidently being due to the abnormally small size of the lens, with probably an atrophy of the zonule, which itself was but part of a general degenerative change. In the right eye the lens acting as a foreign body had produced an iridocyclitis and keratitis.

An immediate operation was advised, but owing to the necessity of gaining the consent of the girl's guardians it had to be postponed until July 20th. On account of the patient's mental condition a general anæsthetic was necessary, and therefore ether was given. I had planned to enucleate the right eye, but realizing that she would never tolerate a prothesis and hoping that the inflammatory process would subside on removal of the lens, I decided to follow the conservative course. The usual antiseptic precautions were taken and the right eye operated on first. An upper corneal section was made long enough to allow the passage of the lens. The instant the cut was finished quite a large amount of rather fluid vitreous escaped, confirming the diagnosis of atrophy of the zonule. The vitreous was cut away, only to be followed by more. On attempting to remove the lens by use of the wire scoop it was found to be adherent to the iris and cornea so that it could not be entirely removed from the latter, and considerable of the former was cut away. The cut iris bled freely and some blood had to be left in the anterior chamber. After cutting away all protruding vitreous and iris and washing out the conjunctival sac, the lids were closed. At this time

I think it would have been better judgment to have enucleated. The left eye was then operated on, the corneal section being smaller and made in the lower part. As before there was an immediate gush of vitreous, which was cut away, and then the lens was easily removed with the wire loop. The iris was smoothed back, the lids closed, and the eyes bandaged.

To prevent the patient removing the dressing and to keep her moderately quiet, she was put into a straight-jacket and given subcues of morphine.

July 21st. O. S. in good condition, eserine instilled. O. D. inflammation about as before operation. Temperature 100°.

July 22d. O. S. wound healed and anterior chamber restored. Pupil clear and no circumcorneal injection except just below corneal wound. O. D. more inflammation. Eyelids red and swollen. Cornea surrounded by a marked chemosis. Iodoform dusted into conjunctival sac.

July 24th. O. S. no inflammation. Pupil clear, though slightly drawn down by adhesion of iris to inner surface of corneal wound. O. D. chemosis very much less and eyelids only slightly swollen. Cornea looked clearer, wound had closed, and the blood in the anterior chamber had partly absorbed. Iodoform again used.

July 26th. O. S. in good condition. O. D. chemosis entirely disappeared and the whole eyeball looked better. Morning temperature 99.5°; evening, 101.2°.

July 28th. Early this morning the patient was found dead, though the evening before she had seemed as well as usual. I think death was due to her poor vitality, which is nearly always the case with these low types of idiots.

In this case the right eye would have atrophied or been enucleated, but the outlook for useful vision from the left eye was excellent, and it is to be regretted that her early death prevented the ultimate results from being observed.

KERATOCONUS.

BY B. E. KELLY.

CARROLL, IOWA.

I herewith report a case of keratoconus, the treatment employed and the results, because, so far as I am aware, nothing similar is given in text books or reported in journals.

Annie P., aged 11 years, was referred to me by Dr. C. A. Beitenman, in June, 1897. Her parents had been aware for several years that she could not see as well as their other children, but gave it no serious attention. A few days previous to her coming to me, her mother noticed what she termed a white scum over one eye. On examination the right cornea was found to be very conical; the exact curvature was not determined, and the apex of the cone was infiltrated with a white deposit. Her vision was limited to the counting of her fingers two feet away, when held between her face and a window, and it could not be improved by lenses.

An iridectomy under cocaine was performed, and a compress was placed over the eye, and a firm pressure was maintained by the use of a piece of elastic webbing two and one-half inches wide.

While the keratome was passing through the cornea the child became alarmed and difficult to control, and the point of the keratome pricked the lens capsule. On dressing the eye on the second day the lens was found to be quite white and opaque. As soon as the eye had recovered from the iridectomy the lens capsule was needled, and after a time this was repeated, which left a clear, dark pupil. The compress was continued for about three months, at which time the curvature of the cornea was but little more than normal. The vision uncorrected was 20/50 with a + 1.00 D. Sph. 20/60, which could not be further benefited by glasses.

So far as the writer is aware this is the first time the lens has been removed for keratoconus. This, and the results which were unusual, is the writer's excuse for reporting the case.

IS ORTHOFORM ALWAYS SAFE IN KERATITIS?

C. R. GARDNER, M.D.
NORTHAMPTON, MASS.

A ten per cent ointment of orthoform, it is claimed, relieves pain for twelve to twenty-four hours after its application to corneal ulcers.

The following ointment was given to a debilitated young woman with hysterical tendencies, because of severe local pain, from a marginal ulcer at outer corner of horizontal axis, left eye:

℞ Orthoform new grs. iij.
Iodoform grs. vi.
Cosmoline drachm i.

The ulcer was cleaned daily with a ten per cent solution of protargol, applied with cotton probe. One drop three times daily of eserine sulphate one-half gr.; Aquæ destillat oz. i. used, and the eyelids closed by silk isinglass plaster. This plaster, owing to tearing, had to be replaced several times, day and night, and the above unguent was used each time. The ointment seemed to relieve pain entirely for about two hours following its use.

On the fourth day, a faint gray line of infiltration stretching from ulcer along the outer and lower third of circumference of the cornea was noticed. On the fifth day, it had doubled in width; had a white base; revealed a denuded furrow, and extended along the lower half of the circumference. Protargol ten per cent was again applied along the line of the furrow, as well as at the ulcer; also, after use of holocain, the application of a cotton probe with fine tip, dipped in hydrozone. Sixth day, the furrow had widened, the base of infiltration was wider and more extended. Mistrusting that orthoform had in some way interfered with nutrition, it was now omitted.

Except the hydrozone, the same treatment otherwise was used and a rapid change for the better followed.

Islands of clear tissue appeared, the edges of furrow became rounded, its base transparent, and the furrow filled up level.

The ulcer also has grown smaller and is now practically healed.

RAPID RECOVERY OF NORMAL VISION FOLLOWING HEMORRHAGE IN THE VITREOUS.

LOUIS A. BIZE, A.B., M.D.
TAMPA, FLA.

Mrs. F. B. K. came to me, April 15, with a history of sudden impairment of vision in the left eye, occurring the day previous, following excessive use of the eyes.

The first and only symptom spoken of, besides impairment of vision, she likened to water flowing over the sight. Upon examination, I found the pupil dilated, tension normal, no external congestion. Vision perception light. With the ophthalmoscope, I found vitreous cloudy and full of flocculent material, unable to see the fundus.

I at once diagnosed retinal hemorrhage and advised her to keep quiet, remain in partially darkened room, apply ice five or six times daily for the first twenty-four hours. I also gave her sat. sol. kali iodide, beginning with fifteen drops and increasing two drops per dose, daily, up to fifty and a mild laxative. I requested her to return one week from date and at that time was gratified to find that she could recognize hand movements at ten feet; she continued to improve rapidly and at the end of the fourth week fundus could be seen fairly well; I then found the location of the hemorrhage to be about one-third inch below and to right of macula. I continued the use of the kali iodide and advised complete rest for the eyes. Examined her eye and tested her vision on each visit and at the end of the eighth week found she could see 20/20, a small nearly central scotoma (possibly ½ x ¼ in.) not sufficient to interfere with the usefulness of the eye, being the only bad result left.

A REPORT OF TWO CASES OF HERPES ZOSTER OPHTHALMICUS—ONE COMPLICATED BY GLAUCOMA.

BY JAMES W. DALBEY, B.S., M.D.,
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Herpes Zoster Ophthalmicus is not an uncommon disease. It is usually very easy to diagnose; it generally runs its course without being affected very much by treatment. Its sequelæ are usually not serious, leaving, as it does, only a slight irregularity of the surface of the cornea. The two following cases are presented, simply because they are out of the ordinary, and are more or less interesting:

James M., age 76, farmer; family history negative. Patient says he has always been strong and well. He has used alcoholic liquors all his life, but never to excess. Until four weeks ago he had no trouble. He was certain his eyes had never troubled him in the least. Then he noticed an eruption on the skin over his right eye, which extended up into his hair. In several days his right eye became inflamed, and then he began to suffer intense pain, extending over the whole of the right side of his head. The left eye and left side of his head was in no way affected. When he presented himself at the hospital he was suffering intense pain. The pain was so severe that he had been unable to sleep. Dr. Ristine, who sent him to the hospital, said that it was almost impossible to control the patient even with opiates. The skin of the patient over the right eye, extending back into the hair, along the course of the supraorbital nerve, was covered with blebs and crusts. These were all confined to the right side of the head. The larger areas, when the crusts were removed, presented an ulcerated brownish surface, characteristic of Zoster gangrænosus. The conjunctiva was swollen, red, and actively secreting.

The cornea showed a typical keratitis bullosa. It was covered with a number of transparent blisters, none of which had, as yet, ruptured. The pupil of the eye was slightly dilated—reacted slowly to light. The tension instead of being slightly diminished, as one usually finds it in Herpes Zoster Ophthalmicus, was here +1, a decided increase over the normal. The fundus could not be seen. The left eye showed no increase of tension or other disturbance. Fundus appeared normal. Vision corrected +1D=6/6. Urine, light yellow in color—sp. gr. 1021 acid. No albumen, no sugar. The patient was placed on strychnia and Tinc. phosphide during the day, and chloral hydrate and morphine at night. Every morning a purgative was given. This general treatment was continued as long as the patient remained in the hospital. Eserine ½ gr. to the ounce, was dropped in the eye every hour during the first day. On the morning of the second day the tension of the eye was normal, but the patient had an excruciating hemicrania. During the day no eserine was used. The patient was seen at 10 P. M.; tension was then +2, and the pupil dilated even more than the night before. The patient was kept upon eserine, and the eye washed out with boric acid. The cornea was protected by placing iodoform ointment in between the lids. It was impossible to keep a bandage on the eye, because the patient would not allow anything to touch the infected areas of the skin. The tension of the eye remained decidedly above normal. Owing to the excessive secretion from the conjunctiva, the irritability of the eye, and the impossibility of keeping the patient quiet, an iridectomy was not made. The patient remained in the hospital ten days, then left without permission.

Dr. Ristine writes that later he had an iridectomy performed, followed by panophthalmitis and loss of the eye. It is now over a year since the patient first presented himself, and as yet there is no indication of glaucoma in the left eye.

Case II. Miss M., age 20; family history negative. Patient says she has always been weak, and never was able to do much work. Patient was exceedingly nervous; she would cry without any apparent provocation. A year before she had been treated for hysteria; patient presented herself, complaining of intense pain in and under the left eye, which was constant. Neither the supraorbital or infraorbital nerve was especially sensitive to pressure; there was no indication of Herpes. Because of the previous history of hysteria, the present nervous condition of the patient, together with the absence of pain in pressing on the infraorbital nerve, a diagnosis of neuralgia of a hysterical nature was made. The patient was treated for two weeks with electricity, externally, and Tinc. phosphide internally, with no improvement whatever. At the end of that time a Herpes made its appearance along the infraorbital nerve, extending up on the lower lid, but not into the eye. According to Kaposi, it is not a rare thing to have the Herpes in other parts of the body preceded by an excruciating neur algia lasting for several weeks, and here we have that condition in the eye.

SOME EXPERIENCES OF AN OPHTHALMIC SURGEON IN THE ARMY OF THE PHILIPPINES.

NELSON MILES BLACK, M.D.

Capt. and Asst. Surg. U. S. V. and Act. Asst. Brig. Surg. 2d Brig. 1st Div. 8th A. C.;
also of Milwaukee, Wis., U. S. A.

Naturally the rigid physical examination a recruit for the U. S. Army has to undergo before acceptance, precludes very much work for an ophthalmic surgeon, and only those cases arising from exposure, trauma, and secondary to various constitutional conditions are met with. The enlisted man of the line must have, according to *Tripler's Manual*, not less than 6/viii vision with either eye. Officers whose refractive error is not too great, and is fully corrected by lenses, are accepted, and men can be enlisted in the hospital corps whose refractive errors are corrected, especially in time of war, when men are accepted who would be rejected at once in times of peace.

In the volunteer organizations some surgeons made no test of eyes, and from those regiments there arose the most trouble, in not a few cases men learned the letters of the test card before coming up for examination; and these same men, when tired of army life, would apply for discharge on surgeon's certificate of disability on account of their eyes. An ophthalmoscopic examination, together with close questioning, especially when the penalty for fraudulent enlistment was made known to them, would bring out the truth, and they would return to duty without giving further trouble. In many instances men with normal vision in one eye, and from –6/xxxv to –6/lx in the other, were accepted by the recruiting officer, their previous record as sharpshooter or marksman in the National Guard being sufficient guarantee for their qualification; but the condition was noted on the muster rolls, and so could not be used as an excuse for obtaining a pension when discovered in the mustering out examination. One case of old granular conjunctivitis was passed by the examining surgeon, and had to be disposed of by certificate of disability, as having been incurred in line of duty. Another volunteer, having an iridodialysis in upper and outer quadrant, with an accommodative ptosis covering it, tried to get discharged, saying it had occurred in line of duty, but finally owned up to its having occurred twelve years ago.

Refractive errors, varying from +.50 to +4.00 hyperopia, to –7.00 myopia and astigmatism at every angle was found; but the U. S. Government does not furnish glasses, nor could they be obtained nearer than the United States, so the cases were simply reported.

Pterygia were very numerous; I must have removed a dozen at least. Many were convalescent from typhoid and malarial fevers and dysentery, who were terribly run down physically, complained of much annoyance from small refractive errors, but on recovering health and strength this condition passed away.

Purulent conjunctivitis was prevalent, and I secured best results with the following wash, flushing the conjunctival sac freely after hot bathing:

℞	Alumen.	
	Acidi Carbolici.	
	Zinci Sulphatis, aa	1.00.
	Aqua Dest.	150.00.
	Mft. Sol.	

We were confined for our drugs to the medical supply table of the army, and this seemed to be the best obtainable.

Purulent conjunctivitis, due to gonorrheal infection, was not infrequent. Of seven cases, five made perfect recoveries, under atropin, constant iced compresses, and flushing hourly with bichlorid solution (1–1,000), followed by saturated solution of boric acid at first, the bichlorid solution being lessened in strength as the condition improved. Argenti nitrat was faithfully tried, but proved inefficient. In one of the cases there was total prolapse of the cornea of the right eye, so I enucleated it for cosmetic purposes. The remaining case had a small staphyloma in lower outer quadrant of left eye, which was removed and left +6/xii vision.

Four cases of iritis progressed rapidly to recovery under anti-rheumatic treatment, atropin and hot bathing. In one case the treatment was stopped for a few days, when I was called into the field on account of the surgeon's time being so fully occupied taking care of wounded, and when I saw the case three months later there was complete posterior synechia, and the man had been recommended for discharge, swearing he would get even with the government for loss of his vision.

There has been up to this time no cases resulting from specific conditions. I suppose it is too early to expect them.

There was one case of idiopathic diffuse retinal hemorrhage in a Norwegian, age 22. When I first saw him there was only two small patches about size of pinhead between macula and disc in right eye, and in three days they had increased to about fifty, and become somewhat confluent, and had begun to appear in the left eye. I could take no field, as time could not be spared for it, and I had no perimeter. I put him on atropin, hot bathing and 3.24 gm. doses Kali Iodid tid, and had all sorts of dermititis and gastric disturbances, and could only give him 0.200 gm. of the iodid three times daily. I saw him last (about three months after first seeing him), on the firing line of the Third United States Artillery before Malolos, using a Krag-Jorgensen very effectively on the enemy, so don't think enough of the hemorrhages remain to give much trouble.

I saw one case of tobacco amblyopia in an old quartermaster sergeant, who had been in the service twenty-nine years. He received a six-months' sick-leave, so I do not know how he turned out.

Many of the men who had been long in the service came for glasses for presbyopic conditions.

The men overcome by heat complained a great deal of muscæ volitantes, but ophthalmoscopic examination revealed nothing beyond slight hyperæmia of the disc.

My duties as medical officer in charge of one of the wards of the First Reserve Hospital, with never less than seventy-five cases, and from that up to one hundred and eighty, and *sick* ones at that, did not give me much time to spend in ophthalmic work, although ordered to "attend to all eye and ear cases referred to you in addition to your other duties," and I was attending to about seventy ear cases each day beside, but the above are a few cases that I kept a very incomplete record of (records being a secondary consideration,) up to February 4, when I was ordered into the field, and ophthalmic work had to be given up as far as I was concerned.

THE

OPHTHALMIC RECORD.

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, NOVEMBER, 1899. No. 11. NEW SERIES

EDITORIALS.

AGAIN THE OCULIST AND OPTICIAN QUESTION.

We are all thoroughly familiar with the controversy that for ages past has been raging between the physician and prescribing druggist—a controversy that would subside from time to time, when each side became sufficiently wearied or recognized the hopelessness of the struggle, and then again would break out with renewed intensity when some particularly aggressive act on the part of the dispenser of medicines reached the public ear. The physician can claim, indeed, as the result of his long and determined effort, some few breaks in the protecting armor of the thrifty dealer; for many states, through the efforts of their medical societies, have interposed legal obstacles to the dispensing of poisons, and occasionally we learn of some druggist being arrested, and even fined, when his unwarranted and selfish act is made known through the medium of the coroner's office.

A similar, though far more hopeless, condition of active warfare is now in progress between the oculist and optician, or rather, we should say there is just now a very active outbreak of hostilities, imposed upon the usual chronic state of suspicion and mistrust. At the present time, the fact that the controversy waxes so exceeding warm is but proof that some of the opposing forces, being damaged, are giving more or less expression to their feelings. On the one side, it is insisted that the conditions calling for correction constitute disease, and being so, only one properly and scientifically qualified is prepared to judiciously and successfully encounter it. On the other side, they claim that any one with a month or six weeks' training, and nerve sufficient, will do as well. How is it possible for matters to be otherwise, when the mighty dollar forms the basis of the controversy? Not satisfied with simplicity of name, the optician seeks the more alluring titles of refractionist, oculist-optician, ophthalmic-optician, or any other old catch-patient title or device. Having drawn his victim in, he will, with smooth and crafty speech, hasten a favorable decision, and then watch with smiling satisfaction the gold-frame-bedizened hayseed trotting on. He is deterred by no ethical control whatever, and sees only the large and immediate profit before him. Being ignorant of normal physiological relations or pathological conditions, so often associated with complex errors of refraction, he is totally without the responsibility that is essential for securing the highest quality of work. He has a superficial knowledge of the test case, and perhaps even some acquaintance with the ophthalmometer; but at best his work is purely mechanical, and at no time can he be confident of the accuracy of his conclusions.

Largely dependent on a floating trade, he is really quite indifferent to the ultimate results, and undoubtedly the disposal of a golden frame is of more consequence than the accurate adjustment—the fitting of the lens is but an incident, the selling of the glass and frame the factors, of the trade.

The oculist, after long years of general medical training, devotes other years to gaining a knowledge of his special work. He must certainly be as well informed in the mechanical principles as the optician, and in addition understand the ocular relations, both in health and disease, and the general relations of the eye, in both health and disease, to the general economy. With this tremendous handicap of training there can be no question as to the more fitting person to do the work.

Why is it, then, that the optician has the cream of all this business, and only allows, in a begrudging way, a few complex or impossible cases to reach the oculist, who, weary-eyed himself, is perhaps longing for something easy?

How, then, may this matter be determined, in order that the future of the oculist may be secure and the optician get his just reward? Not by local measures surely. In proof of this, a society of oculists was organized some few years ago, in one of our larger cities, and aside from professional culture, one of the avowed objects of its formation was to control the dealers. While the society still meets at the old stand, attends strictly to legitimate pursuits, and struggles for existence, the opticians are buying blocks and wearing gems.

As the clear-cut statement of Dr. Allport must be accepted, that an eye requiring correction is a pathological eye, and that without exception a mature medical judgment is necessary to decide within what limits correction should be made, then the whole subject should be taken from all interested and settled by such legal rulings as will place the matter in secure and final control. Aside from this, there is but the slow process of educating the public up to an understanding of their true condition and the proper means of securing relief. Like all matters of education, this is a slow and tedious process, and once more places the oculist at a disadvantage in the struggle. For, while the optician and his agents may without scruple approach the public, the oculist by so doing would degrade both his profession and his standing. In the mean time let him run who must. W. E. H.

THE OPTICIAN QUESTION AGAIN.

Having already aired my views on this subject quite fully, I should not return to it if I had not been asked by Dr. Casey Wood to do so.

I think there can be no question that if a person has any difficulty in using his eyes, or thinks for any reason that he needs glasses, the best and safest thing is to consult a good oculist; but it seems to me equally clear that the next best thing for a large class of patients is to go to a good optician. Many people, probably the large majority, will not go to an oculist until they have tried what they consider the cheaper plan of going to an optician, and it is a poor policy for us oculists to try to compel them by legislation to do otherwise. As long as opticians confine their ocular therapeutics to the fitting of glasses, I certainly think that we had better leave them alone. To consider this question fairly, we must clear our minds of cant, and avoid exaggerating the evils which result from the prescription of glasses by non-medical men. Some patients undoubtedly suffer serious consequences by losing time in this way, when they should be having active medical or surgical treatment; but so far as I can judge such cases are quite rare, while as for the injurious effects of improper glasses, although I have seen many patients who suffered inconvenience and distress from them, I have never yet seen an eye which I could candidly say I thought had been actually damaged by the use of an improper lens. Some authorities think they have observed neuritis and choroiditis from uncorrected or improperly corrected refractive errors. I have seen nothing of the kind, and am very skeptical about its ever occurring; and so far as the influence of eye strain on the development of glaucoma is concerned, there is a good deal to be said in favor of the view that exertion of the ciliary muscle tends to prevent rather than bring on this disease. Of course, as already intimated, it occasionally happens that an optician does harm by holding patients with serious diseases; but in my experience reputable opticians are generally very conscientious about refusing to fit glasses to people whom they think need something else. By reputable opticians, I do not mean the average traveling spectacle vender, nor the "refractionist" who tries to deceive the public by calling himself a "doctor"; these, so far as I know, are generally robbers as well as humbugs.

With regard to the practice of the physicians, who refer cases presumably requiring glasses to opticians, this, where it occurs in large cities, is certainly reprehensible; but is, I believe, very exceptional. In .the smaller towns, however, it is sometimes impossible for doctors to get their patients to do the best thing, and in such cases the next best thing is to try the local optician. Perhaps one other reason why physicians sometimes do this, is because they dislike to subject their patients to unnecessary expense, thinking that if glasses are not needed the expense of an examination will be saved if an optician rather than an oculist is consulted. Admitting that this may be a "penny wise" policy, it suggests one way in which we, as specialists, can honorably do something to get even with our friends, the general practitioners. If in doubtful cases, which they refer to us, we were to make no charge, or only a nominal one in case the event proved that the trouble was not due to the eyes, I think we should hear much less of this phase of the difficulty.

H. G.

A Death following a Sty.—H. Guth (*Prager Medizinische Wochenschrift*, No. 3, 1898; *St. Paul Medical Journal*, May, 1899) says that a woman was brought into the clinic with both lids greatly swollen, the conjunctiva chemotic, both eyeballs protruding, high fever, Cheyne-Stokes breathing, tonic and clonic spasms. Ophthalmoscopic examination showed septic retinitis; death followed; post-mortem showed that there was suppurative meningitis which had proceeded through infection from a hordeolum; the suppuration had infiltrated the orbital tissues and penetrated through the right cavernous sinus to the meninges.

CORRESPONDENCE.

OPHTHALMIC SECTION.

INTERNATIONAL MEDICAL CONGRESS.

To the Editorial Secretary of the Ophthalmic Record.

Dear Sir,—The committee of arrangements of the Section of Ophthalmology of the Thirteenth International Congress of Medicine, to be held in Paris, August 2, 1900, has adopted several subjects for special discussion, amongst which is the following: "Valeur comparative de l'énucléation et des opérations susceptibles de la remplacer." Professor Panas, the president of the section, has requested me to ascertain the opinions of American surgeons on this subject, or in other words, to prepare a report based upon these opinions, which shall be similar to the one recently published by the Ophthalmological Society of the United Kingdom on the same topic, and thus place on record the collected American evidence respecting the various operations which may replace enucleation of the eyeball. To this end I have prepared a printed form containing a series of questions, the answers to which will facilitate this statistical investigation, and have sent it to the oculists of the country. As there is no complete list, doubtless some ophthalmic surgeons have been missed. I hope, therefore, by the publication of this letter, to bring the matter to the attention of our branch of the profession, and respectfully request that any colleague who has information on this subject will, if he has not yet received one of these forms, communicate with me. It is particularly desired to collect evidence in regard to Mules's operation, and the various operations for the implantation of a glass ball after complete enucleation.

Yours very truly,

G. E. de Schweinitz.

1401 Locust Street, Philadelphia, Pa.

REVIEW.

The New Graefe-Saemisch Handbuch der Gesamten Augenheilkunde.—Of all the systematic treatises on disease of the eye that have appeared during the last thirty years, none can compare in importance with the new and greatly enlarged second edition of the Graefe-Saemisch *Handbuch der Gesamten Augenheilkunde.* Indeed one might affirm with full justice to all the other admirable systems of diseases of the eye that have from time to time appeared here and in other countries, that this *Handbuch* is the only one that can, in the true sense, be considered a complete study of ophthalmology. We may readily assume, from the character of the parts that have already been issued, and from the position in the medical world held by the authors who are to contribute the remaining chapters of this grand work, that the forthcoming volumes will be in no wise inferior to the thirteen parts now lying before us. It will be remembered that the books of the first edition numbered seven, composed of fourteen chapters, all made accessible to ophthamologists in the years 1879 and 1880. The program of the new handbook varies somewhat from the original announcement. The new edition is brought out by Professor Saemisch alone, it having been arranged that the co-operation of Professor Graefe should be confined to the first issued contribution, making the eleventh chapter (eighth volume) of the work. It is interesting to note that of the twenty-three contributors to the first edition of this encyclopædia, only ten (Professor A. Graefe, Dr. E. Landolt, Professor Leber, Professor Merkel, Professor von Michel, Professor Saemisch, Professor Schirmer, Professor Schmidt-Rimpler, Professor H. Snellen, and Professor de Wecker) have written for the second edition. The places of the other thirteen have been filled, and new subjects are to be presented by the following brilliant array: Dr. Theodor Beer, Professor O. Eversbusch, Dr. A. Fick, Professor R. Förster, Professor Sigmund Fuchs, Professor Greeff, Dr. A. Groenuw, Dr. Heddaeus, Professor E. Hering, Professor C. Hess, Professor E. von Hippel, Professor J. Hirschberg, Dr. A. Kraemer, Prof. M. Nussbaum, Professor H. Sattler, Professor

Schleich, Professor Oscar Schultze, Dr. H. Snellen, Jr., Professor Hans Virchow, and Professor A. Wagenmann. There are consequently thirty authors represented in the Second Edition. So far we have received but three parts (two hundred and forty pages) of Graefe's contribution (Disturbances of the Motility of the Eyeball, with a Description of its Normal Movements). These were published before the death of the lamented author, but we trust that his decrease will not interfere with the appearance of the remainder of the chapter.

In addition to the large amount of material that has accumulated since 1879, to which it is necessary to refer in the new work, twelve new chapters have been added, three of them on the anatomy and physiology of the eye, nine others on its pathology and theraupeutics. In other words, we are promised thirteen volumes of printed matter and illustrations, in addition to a separate index that will make a fair-sized book in itself, so that practically a new work is contemplated.

Hirschberg writes in his happiest manner a history of "Ophthalmology Among the Ancients," and one must conclude, after even a casual reading of these pages (four hundred and eighteen in all), that many of our so-called modern inventions and discoveries were the familiar property of Claudius Galenus, Celsus, Ptolemaeus, Damionos, Paulus Ægineta, and the other masters of the Greek school of surgery.

As one example of these numerous rediscoveries, Hirschberg quotes from Paulus the statement that certain surgeons (Celsus, Archignes, and Galen) had been in the habit of trephining the nasal portion of the bony orbit, so that the purulent secretion of a chronic dacryocystitis might find its way into the nose. This method of dealing with nasal duct obstruction has often been rediscovered, says the author in a foot-note, and he refers, as an instance of it, to Kyle's article on this subject in the December, 1897, number of the *American Journal of Ophthalmology*.

It will be remembered that it was this versatile author who translated the ophthalmological portion of the Ebers papyrus, a record fully set forth in the first twenty pages of Chapter XXII.

Interesting as is this study of ancient ophthmology, we look forward with even greater pleasure to Professor Hirschberg's second essay, "The History of Ophthalmology in the Middle Ages and in Our Own Times."

Dr. Kraemer, of Zurich, writes in a most interesting manner on the "Animal Parasites that Infect the Eye." This is by far the most complete account of the subject and of its literature that has yet appeared.

Dr. A. Fick's chapters on the "Hygiene of the Eye" have reached us incomplete, and we defer our review of them until a later day.

It is only proper to say that the *Handbuch* is published by the well-known house of Wilhelm Engelmann, in Leipzig, who also brought out the first edition, and that the subscription price is only two marks each part.

CASEY A. WOOD.

THE EMPLOYMENT OF SOLUTIONS OF TOLUIDIN-BLUE AS COLLYRIA, AND AS A STAIN FOR CORNEAL ABRASIONS AND ULCERS.—(Clarence A. Veasey, A.M., M.D., Philadelphia, Pa., the *Phila. Med. Journal*, August 13, 1898.)

This compound is a member of the aniline group closely related to methylene blue; it appears as a bluish crystalline powder, readily soluble in water or alcohol, forming a dark blue solution. Dr. Veasey has been using the solution in strengths varying from 1.50 to 1.10,000 as a collyrium in most of the inflammatory cases which he has encountered in dispensary service during the past six months, and has been favorably impressed with its action.

No irritation or stinging was observed when the stronger solutions were used, but a solution of 1-1,000 seemed to be just as efficient as a stronger one, and did not stain the surrounding skin so deeply. He has been in the habit of flushing the conjunctival sac with boric acid solution so as to get rid of accumulated secretion, and then to use the solution of toluidin-blue as frequently as other collyria would be employed under similar circumstances.

The stain has seemed to hasten materially the healing of sluggish corneal ulcers, and to cause marked diminution of the discharge in conjunctivitis, especially in the acute contagious and pneumococcus varieties in which the discharge is usually so abundant. It has also been employed with benefit in purulent dacryocystitis, the formation of pus soon ceasing under its use, providing there be no necrosed bone present. The discoloration upon the surrounding skin and upon the fingers is readily wiped away with a moist pledget of absorbent cotton.

The stain has a similar action upon corneal abrasions to that of fluorescin. Corneal abrasions and ulcers are at once stained and dark blue, without any discoloration of the remainder of the cornea; and the reparative process is hastened by its use.

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

Dr. O. D. Hamlin, Oakland, has been elected physician to the Deaf and Dumb and Blind Institute at Berkeley, Cal.

Dr. William Dudley Hall, of Boston, has recently been quite ill with pneumonia. We understand that he is improving, and hope that he may soon be at his business again.

Dr. Manuel Uribe Troncoso, editor of the *Anales de Oftalmolgia*, announces the removal of his office and residence to No. 19, Calle de Mesones, City of Mexico.

Dr. Burton K. Chance has been appointed assistant surgeon, and Dr. Walter Blair Weidler resident surgeon, to the Wills Eye Hospital of Philadelphia.

Dr. Guillery, of Cologne, in experiments concerning the amblyopia of strabismus cases, concludes: That the theory of amblyopia from disuse is untenable, and that the causes of amblyopia in strabismic eyes are manifold, and cannot be satisfactorily explained from any one standpoint.

Dr. Ludwig Bach, of Wurzburg, in some experiments on antisepsis or asepsis in operations on the eyeball, comes to the following conclusions: That much more is accomplished by mechanical cleansing with irrigation than by mere irrigation. That antiseptic solutions of sufficient strength to destroy bacteria are so irritating that their use must be advised against.

Dr. Julius Wolff, of Cologne, after a study of myopia of nine degrees or more, and with secondary changes and more or less diminished vision, found about ten per cent of the patients whose parents were related.

Dr. Walter Albrand, of Berlin, concludes, after an observation of two hundred and ninety-five cataract operations, in Schölers' Berlin Clinic, that because of a series of cases, which seemed to accompany the simple extraction, of severe iridocyclitis with hypopyon, occurring in a period of several months, without infection of the corneal wound, and from eight to fourteen days after the operation, the tendency has been to return to extraction with iridectomy.

Dr. M. Straub, of Amsterdam, after a statistical study of one hundred and fifty-nine cases of congenital amblyopia, found 37 per cent with strabismus, 62 per cent lacking binocular vision (including strabismus), 60 per cent of anisometropia, and 17 per cent of isometropia, having binocular vision, concludes: That because of the number of cases (17 per cent) of amblyopia with binocular vision and equal refraction, the explanation of amblyopia from disuse fails, and a primary defect must be assumed as a cause of the amblyopia. After studying the hypermetropia of these cases, he asks the question, Why is it that a congenitally amblyopic eye in the larger majority of cases is hypermetropic? He answers it by saying that such an eye retains the congenital refraction, the normal hypermetropia of infancy, because it does not develop into emmetropia as it does in the healthy eye.

Amongst the ophthalmological papers which were presented to the New York State Medical Association, held in the Academy of Medicine, New York City, October 24th, 25th, and 26th, were the following:

"Operative Treatment of High Myopia by Removal of the Crystalline Lens," by Dr. Charles Stedman Bull, of New York City; "Eye Complications in Typhoid Fever," by Dr. A. A. Hubble, of Buffalo, New York; "The Etiology Relation of Autoinfection and Autointoxication to Eye Diseases," by Dr. A. A. Hubble, of Buffalo, New York.

An Ointment for Granular Conjunctivitis.—Bloebaum (*Deutsche Medizinal-Zeitung*, January 23d) reports having observed decided benefit from the use of the following ointment in all stages of the disease:

℞ Copper sulphate,	
Salicylic acid,	
Cocaine, aa	part 1
Vaseline	parts 100

IN the new building of the Jefferson Medical College of Philadelphia a Laboratory of Ophthalmology has been established, where the senior students, in addition to their regular instruction in didactic and clinical ophthalmology, will have the opportunity of performing various laboratory exercises, particularly operations upon animals' eyes and microscopic work related to the pathology and bacteriology of the eye.

DR. W. B. PINEO, of Minneapolis, Minn., has just returned after a few weeks trip to Washington, Boston, New York, Philadelphia and Chicago. Dr. Pineo went to Washington primarily to take the 33d degree in Masonry. There are very few physicians who have this degree, and certainly very few ophthalmologists. We congratulate Dr. Pineo on the honor thus bestowed upon him.

DR. EMMERT, of Berne, Switzerland, reports favorably on the use of protargol in several hundred cases of eye disease. He uses it principally in the various forms of conjunctivitis and lachrymal troubles in the strength of from 1 to 3 per cent. In treating the various forms of conjunctivitis, he also uses a protargol ointment in the strength of from 5 to 20 per cent (20 to 80 grains to the ounce) made up with vaseline. He uses this ointment between the edges of the lids and smeared on their cutaneous surfaces, and over this applies cotton and a bandage. He bandages both eyes in this way at night, and in the daytime applies a bandage over one eye, alternating the eye with each successive day. He reports exceptionally good and rapid results from this treatment.

THE SEQUELÆ OF IRITIS.—Charles D. G. Hailes (*Edinburgh Medical Journal*, October), in an article entitled "The Clinical Aspects of Iritis," says: "The sequelæ of iritis, when treatment has been omitted or begun too late, are: (1) formation of posterior synechiæ binding down the margin of the iritis, so that the mobility of the pupil is interfered with; (2) occlusion of the pupil, or filling in of the pupillary space with membrane formed from the inflammatory exudates, causing permanent dimness of vision, but if incomplete, dangerous; (3) exclusion of the pupil, with iris bombé, not necessarily causing dimness of vision, if the pupillary area be free, but interfering with the escape of fluid into the canal of Schlemm, giving rise to excess of tension, and destructive glaucoma is always to be feared as a further complication; (4) total posterior synechiæ, with cyclitis, is always present, followed by disorganization of the globe."

In the *Medical News* for October 21st is an interesting article by Dr. William H. Poole, of Detroit, entitled "Beta-Eucain as an Anæsthetic in Eye, Nose, and Throat Work." Dr. Poole generally uses a two per cent distilled watery solution in eye work. He reaches the following conclusions:

1. Eucain is decidedly less toxic than cocain, therefore superior to it.

2. Its aqueous solutions keep well and can be sterilized by boiling without destroying the activity of the drug.

3. It produces anæsthesia equally well and sometimes better than cocain.

4. It is superior to cocain in that it does not cause heart depression or other unpleasant effects.

5. It does not cause mydriasis or disturbances of accommodation, which is an advantage in some cases.

6. It is less dangerous to the cornea than cocain, inasmuch as it does not cause desquamation of the superficial epithelium.

Dr. S. J. Jones of Chicago has inaugurated a crusade against unnecessary noise in the city, a work which we trust may be crowned with complete success. There is no question that the unnecessary noises in the city constitute a menace to health and shorten life in many instances. The railroads have promised to co-operate by abating the ringing of bells and blowing of whistles as far as possible in the conduct of their traffic. We trust the street-car lines will also be brought into the movement, and among other things, that the conductor who blows a shrill whistle in the ear of a passenger sitting at the end of the seat may be treated with the rigor he deserves. The carting of building iron through the streets, the cries of hucksters and of newsboys, the tooting of advertising bands, and the village-like processions which congest the streets, creating endless turmoil, should be relegated to the small towns, or some other limbo. In this connection we would like to call attention to the elevated roads, which, for unearthly screeching and creaking as they turn the corners or make stations easily occupy the front rank. Among these malefactors, the people who keep barking dogs or noisy cats should be severely dealt with, and everybody who is inconsiderate of his neighbor's comfort should be taught a salutary lesson. This is a large undertaking, but we believe that it can be accomplished under the able generalship of Dr. Jones.—*Chicago Medical Recorder.*

CATARACT.—The subject covered by Kalish's paper is summarized by him as follows: 1. Immature cataract is due to local conditions dependent on general systemic causes. 2. Senility is rarely a direct, but may be a predisposing, cause. 3. Fluids containing perverted aliments resulting from defective metabolism supplied to the lens through its nutritive stream may be considered an exciting cause. 4. Deficient blood-supply, thus reducing the quantity furnished, may be considered a contributing cause. The following conclusions may be drawn: 1. Immature cataract may be regarded as a largely preventable disease. 2. It may, by properly directed treatment, local and constitutional, be prevented, arrested, retarded, or cured. 3. The circulation of the blood must be regulated. 4. The faulty digestion may be rectified. 5. Constant supervision of the eye must be maintained by a competent ophthalmologist, that eye strain be relieved, and all changes in refraction be promptly remedied. 6. Treatment by conjoined manipulation and instillation should be instituted at the earliest possible moment. 7. Finally, if local and constitutional treatment should not provoke a favorable issue, they will establish a more nearly normal state of the ocular tissues, and if an operation be found necessary, this improved condition of the ocular structures will insure a larger degree of success.—Medical News, abstracted by the *Journal American Medical Association.*

WHERE LOVE IS INDEED BLIND—Ohio Wedding Ceremony in Which All Participants are Sightless.—At a wedding in Cleveland, recently, love was blind literally. Bride and groom were sightless, as were the justice of the peace who officiated, and the members of the orchestra which performed the Lohengrin wedding march, while none of the invited guests could see. To every blind person in Cleveland an invitation to be present had been extended. Even the beggar on the street corner was not excluded, and for one night he mingled with good society and was made happy.

The groom, William Moore, is a peddler of notions. His wife, who was Elizabeth Brown, was also engaged in the same occupation. Moore had sold goods to Mrs. Mary Deweese, and when she heard he desired to marry she offered to give him the wedding. She threw open the doors of her home to all the blind of the city, and notified all her friends to help her in furnishing a home for the young couple.

Mrs. Deweese spared no expense to make the event one which the afflicted blind will long remember. She is rich, and having a son who is blind, her heart goes out in sympathy to all who are afflicted in the same way.

The wedding attracted much attention in the neighborhood. Scores of neighbors called just long enough to leave some little token of their sympathy.

The ceremony was unusually impressive. Justice Palmer spoke feelingly to his blind brethren present. The high and the low then sat down together to a meal which was very elaborate, after which the couple was driven home, escorted by a large number of the blind guests.

In a very interesting letter from Dr. Henry D. Noyes, in the *Medical Record* for October 21, 1899, many items of interest are noted.

Dr. Noyes has recently returned from Europe, and while there attended the International Ophthalmological Congress, and visited many other points of interest. He inspected a sideroscope at the Clinic of Prof. Fuchs, in Vienna, which is so exactly and delicately constructed that the needle will respond to the presence in the eyeball of a particle of iron, which is no more in bulk than the head of an ordinary pin. He also saw the X-ray apparatus of Dr. Mackenzie Davidson, now of London, but formerly of Aberdeen, who avails himself of stereoscopic methods by which under an exposure of eight seconds the size and locality of a foreign body can be designated with absolute certainty. Dr. Davidson's method is set forth in the *British Medical Journal* for December 3, 1898, and January 1, 1899. Another notable achievement in ophthalmology was presented by Prof. Dimmick, of Innsbruck, who showed good photographs of the living fundus oculi, not only of the nerve, but also of the macular region. He has succeeded in obviating the damaging influence of the corneal reflex, which has been a stumbling block to all experimenters for thirty years.

Dr. Noyes saw a new demonstrating ophthalmoscope devised by Dr. Walther in Prof. Snellen's Clinic at Utrecht, capable of allowing an observation of the fundus with one-half of the pupil of the instrument, and of projecting emergent rays through the other half, and forming a picture of the fundus upon a receiving table. The instrument appears to be thoroughly clear and perfect in every way. Another apparatus of great interest was one that projects upon a screen the microscopic section of tissues exactly as they come from the stage of the microscope. The apparatus costs about five hundred dollars, and one of them should be owned by every progressive medical college in this country. So far they are principally used by Fuchs of Vienna and Dor of Utrecht. The instrument is made by Zeiss.

Mr. Priestly Smith read a paper on Convergent Strabismus, of which Dr. Noyes speaks most highly. A point which he conspicuously brought out was the urgency of dealing with strabismus at a very early age, that the cerebral function of binocular vision may be duly educated. It is this which forms the barrier to success by usual modes of treatment when the squinting subjects have reached the age of seven or more years. Mr. Smith would employ glasses as early as they can be worn on the face, and would operate under two years of age.

Dr. Noyes also speaks of an improvement in artificial eyes devised by Prof. Snellen. They were made by Muller of Wiesbaden, Germany. The modification consists in laying a cover upon the back of the shell which may be flat or concave, and in some instances it is modeled after a plaster cast of the artificial cavity. Weight is not noticeably increased, and the advantage gained is a great improvement in appearance and the diminished tendency to unpleasant catarrhal secretions. Dr. Noyes feels that these shells may do away with the trend toward Mules' Operation.

THE following is a letter addressed to the editors of the Ophthalmological Section of the American Medical Association, and members of the Section:

My Dear Doctor,—For some years past much of the value of the contributions to the scientific session of the Section has been lost owing to large number of papers presented, making it necessary to rush through the program and to shut off much valuable discussion. At the meeting in Columbus, the executive committee reported the following resolutions, which were unanimously adopted by the Section:

"It is the decision of the executive committee that the number of papers to be read at the meeting to be held in 1900 be limited to forty, of which fifteen are to be on invitation by the chairman, and twenty-five to be accepted from volunteers. These are to be limited to fifteen minutes each.

"Three addresses by special invitation may be obtained, at the discretion of the officers, from within or without the Association.

"Papers are to be accepted in the order of their reception and at the discretion of the executive committee.

"Abstracts of all papers must be sent to the secretary before May 1, 1900.

"Discussions are to be limited to five minutes each, and no person shall speak more than once in the same debate.

"Due notice of this will be printed in the journal of the association, which will be considered the official notice for the volunteer papers."

Owing to the large number of ophthalmologists affiliated with the A. M. A., any and all of whom are competent to prepare papers which would be of value to the ophthalmic world, and would be gratefully received by our members, it will be necessary for those who desire to contribute volunteer papers to make arrangements with the officers *at once*, so that place may be reserved for them on the program. Positively no exceptions to the rules above adopted will be allowed, so it is earnestly requested that, if you wish to contribute to the scientific program at our next meeting, you will write immediately to the secretary, Dr. C. F. Clark, 188 East State Street, Columbus, O., stating, if possible, the title of your proposed paper. We remain,

Yours very sincerely,
C. F. CLARK, Secretary.

H. V. WÜRDEMANN, Chairman.

A DANGEROUS EXPERIMENT.—The *British Medical Journal* has an account of an operation for cataract performed upon a lioness three years old, by Professor Gustavo Pisenti, of the University of Perugia. The animal was placed in a suitable cage in the middle of the menagerie, and the first difficulty was the administration of the anæsthetic. The intervals between the bars of the cage were filled up with cotton wool, and a large packet of gauze impregnated with chloroform was placed in the cage, the door of which was then closed with a shutter. In about a quarter of an hour a reconnoissance was cautiously made, and the patient was seen lying stretched out and apparently in a condition of deep coma. She was then dragged out of the cage, and bound and gagged. She was then placed on a table, but before the operation could be begun she suddenly awoke and struggled violently, rolling on the floor, where the medical men, "with admirable coolness, but not without intense emotion, which might be seen in their countenances," held her down while the animal's head was wrapped in a towel steeped in sulphuric ether. The lioness, however, managed to free herself from the gag and partly from her bonds, and gave a roar which made the majority of the spectators beat a hasty retreat. But the ether overcame her, and Professor Pisenti, with great pluck, dragged her into the cage again, where the anæsthetic *coup* *de grace* was given by means of another packet of gauze steeped in chloroform. The beast's head was pulled out through the door of the cage, and securely held in position. Professor Pisenti then operated with brilliant success.

The Treatment of Hypopyon Keratitis.—Dr. Eduard Zinn finds that Saemisch's method of emptying the anterior chamber in hypopyon is almost always followed by more or less harmful sequelæ, such as adhesions of the iris with the operation wound, secondary glaucoma, etc., and has for the past few years (*Wiener klinische Wochenschrift*, No. 9, 1899,) resorted to the following procedures: (1) Small ulcers not yet complicated by hypopyon are always cauterized, as far as the yellow infiltration extends, with a fine-pointed galvano-cautery attachment. If the hypopyon is small, not more than 2.2mm. high, nothing further is done. According to experience resorption of this small exudate take place during the further treatment of the ulcer. If the ulcer is broad and the hypopyon large, extending to the middle of the chamber or farther, the ulcer is freely cauterized and its lowest portion burned until the base is perforated. By rubbing or stroking with a Daviel spoon, the pus is usually evacuated from the chamber. The small quantity of pus remaining behind will be absorbed. Only in exceptionel cases is a wound otherwise made, and then only with a curved lance, and at the lower sclero-corneal margin. (2) Instillation of atropine or scopolamine two or four times daily. (3) The eye is immediately covered with a Fuchs protecting shield. The patients may walk about. They should have nutritious diet. (4) Every two hours, by night also, the shield is removed, and sublimate vaseline (1:5,000) is rubbed into the conjunctival sac with a cotton tampon, and the shield immediately replaced. (5) The cornea is dusted lightly with xeroform three to six times a day. (6) When blennorrhœa of the lachrymal sac coexists, the sac is emptied by compression, and the pus removed with a tampon dipped in sublimate before the salve is applied. Xeroform emulsion (xeroform, 10; glycerine, distilled water, aa 50,) may be injected into the lachrymal duct two or four times a day. (7) Should the ulcer show a tendency to progress, which is seldom the case, the affected area is cauterized.—*New York Medical Record.*

Amblyopia from Hemorrhage.—Holden has experimentally investigated the blindness observed after profuse hemorrhage, which has been accounted for variously. He operated on two healthy dogs and later examined the eyes microscopically. The pathologic conditions were edema of the nerve-fibers and ganglion-cell layers of the retina, and some ganglion-cells beginning to show signs of degeneration. This will explain the ordinary cases of amblyopia following hemorrhage. In those unusual ones in which the sight disturbance takes the form of a central scotoma, while the ophthalmoscopic changes indicate retrobulbar neuritis, some special explanation is required which can not be given except after pathologic investigation of each particular case. He also investigated the suddenly developing amblyopia which has been observed after ingestion of methyl alcohol, and finds that it comes under the same category, as due to the nutritive disturbances in the ganglion cells of the retina.—*Archives of Ophthalmology.*

TRACHOMA.—Ziem, discussing the causation of trachoma, holds some views on climatic or telluric conditions, such as excessive heat and sunshine; dust and vapor, directly affecting the eye; mold, in malarial districts especially; swamp air, affecting the whole respiratory system through the nose, the conjunctiva becoming affected either by continuity or vascular connection; and by means of some agent entering the digestive tract, possibly in the drinking water, so that it is carried to the eye through the circulation. Each of these causes is discussed separately. He thinks that the intimate connection between trachoma and nasal catarrh is established, and this explains certain peculiarities in its manifestation better than other theories. These views affect his treatment of the disease, and he has made it rather dietetic and hygienic, even when local scarification is carried on. He believes that much can be done by proper measures of public hygiene, drainage, ventilation, foresting, etc.—*Journal of American Medical Association.*

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, DECEMBER, 1899. No. 12. NEW SERIES

ORIGINAL ARTICLES.

THROMBOSIS OR EMBOLISM OF THE CENTRAL ARTERY OF THE RETINA AFTER LIGATION OF THE VESSELS OF THE NECK.

BY H. GIFFORD, M.D.,

OMAHA, NEB.

Henry Moore, a German, aged 56, was operated upon April 26, 1898, by Dr. A. F. Jonas for epithelioma of the left tonsil. The tumor was removed by an external incision, both carotids and jugulars being tied in the course of the operation. Immediately after the operation the nurse noticed that the pupil of the left eye was much smaller than that of the right, but it was not until May 3d that the patient noticed that this eye was blind. He did not think that the blindness could have existed before this, though this opinion must, of course, be accepted with some reserve. On examining the patient, at Dr. Jonas' request, I found that the eye had no perception of light, the pupil was small and did not respond to direct light stimulus. The outlines of the optic disc were entirely lost in a prominent mass of glistening white œdematous tissue about twice the diameter of the normal disc. The swelling was more pronounced in the lower half, where it reached a height of 3D. The surrounding retina was slightly œdematous, but not distinctly white except at the macula, in the center of which the ordinary cherry spot was present. Upon the surface of the œdematous tissue, in the place of the papilla, only one vessel could be made out, the others showing themselves more or less indistinctly at the borders of the central swelling, and those which contained any blood showed it in interrupted necklace-like columns. The distinction between arteries and veins was hard to make out, the columns of blood being perhaps more broken up in the arteries. I saw the patient again after about ten days, and by this time the œdema of the nerve and the surrounding retina had almost entirely disappeared. The column of blood in the vessels was continuous, but their diameter was decidedly less than the normal and the arteries had none of the usual glitter. The man made a good recovery from the operation, but died in the course of two months from pneumonia without regaining any sight in the eye.

It seems to me probable that the trouble with this man's eye was due to thrombosis rather than embolism, and from the marked swelling of the optic disc, I judge that the thrombosis affected not only the central retinal artery, but the small vessels supplying the optic disc as well.

At the time that this observation was made I had never heard of such an accident after ligation of the vessels of the neck. But a few months afterwards, at the meeting of the Heidelberg Ophthalmological Society, Siegrist reported two similar cases.* In one of these the patient was a man with carcinoma of the tongue, after the removal of which a profuse secondary hemorrhage occurred, which necessitated the ligation of the common and internal carotids. The eye on the same side became blind soon after the ligation and the patient died six days later. The post mortem showed a thrombosis in the internal carotids extending from the point of ligation into the vessels of the brain, and for a short distance into the ophthalmic artery. The greater part of the latter artery was free, but at the point where the central artery of the retina was given off, an embolus completely obliterating this branch was found. The ophthalmoscopic picture presented was that ordinarily found with embolus of the central artery of the retina. The second case was that of a young man with traumatic pulsating exophthalmus; both internal and external carotids were tied and the eye of the same side became blind, with the same ophthalmoscopic picture as that in the preceding case; and in the course of the next few months atrophy of the retina, with accumulation of the pigment in bone-corpuscle formed clumps, and sclerosis of the choroidal vessels occurred. In the discussion of this paper Uhthoff mentioned a case which had been reported by him at the international congress at Rome, but which, through some oversight, had been published in the proceedings of the congress by title only. In this case, after the ligation of the internal (or common) carotid, the thrombosis extended from the

(**Bericht der Ophthal. Gesellschaft*, Wiesbaden, 1898.)

point of ligation up beyond the point at which the ophthalmic artery was given off, with resulting amaurosis and the ordinary appearances of embolism of the central retinal artery, although a microscopic examination failed to discover any thrombosis or embolism within the orbit. He also mentions another case in which a thrombosis of the carotid extended beyond the point at which the ophthalmic was given off, but in this case neither blindness nor any decided ophthalmoscopic change occurred.

In a case reported by A. Graefe (*Deutche Med. Woch. 40, 1898*) choked disc developed ten days after ligation of the common carotid for pulsating exophthalmus, but in this case the patient regained his sight. If the change in the nerve had occurred immediately after the ligation, in this case, it would seem probable to me that it was not a real neuritis, but an œdema from thrombosis of the small vessels supplying the papilla; as it was, embolism of some of these vessels may have occurred from a partial breaking down of the thrombus extending from the carotid into the beginning of the ophthalmic artery. That the picture of choked disc may be simulated by thrombosis or embolism of the small arteries is suggested by the appearance of the nerve in the case which I report. Here the œdema of the nerve-head was so pronounced in comparison with the changes in the surrounding retina that I was at first inclined to make a diagnosis of choked disc rather than that of thrombosis or embolism.

With regard to the corneal changes which have been observed after ligation of the carotid for pulsating exophthalmus, it is probable that most of them are due to superficial lesions resulting from exposure of the cornea on account of the prominence of the globe, and have no direct connection with the ligation of the blood vessel; but that some of them may be due to the interference with the circulation is indicated by the microscopic examination of the first of Siegrist's cases, where a sort of parenchymatous degeneration was observed, similar to that noticed by Wagenmann after section of the long ciliary arteries.

These cases are not reported with the idea that they may form any positive contra-indication to ligation of the carotid for pulsating exophthalmus. Where other remedies fail and the symptoms are so annoying that the patient is willing to assume considerable risk for the chance of being rid of them, it is undoubtedly the proper thing to do; but among the dangers of which the patient should be warned, that of a possible loss of sight should not be forgotten. That it does not occur more frequently is probably, as Uhthoff suggests, because the anterior anastomoses of the ophthalmic artery are sufficient to prevent it; and to guard against it as well as possible it has been suggested to attempt to widen these anastomoses by compression of the carotid, at intervals, for some days previous to the operation. This might well tend to prevent brain complications, but as the anterior anastomoses of the ophthalmic are chiefly with branches of the extreme carotid, little service would be done to the eye unless an incision were made to allow the pressure to be limited to the internal carotid.

A SIMPLE EYE SHADE.

BY S. MITCHELL, M.D.,
HORNELLSVILLE, N Y.
Oculist and Aurist to St. James Mercy Hospital, Oculist to the Erie Railroad.

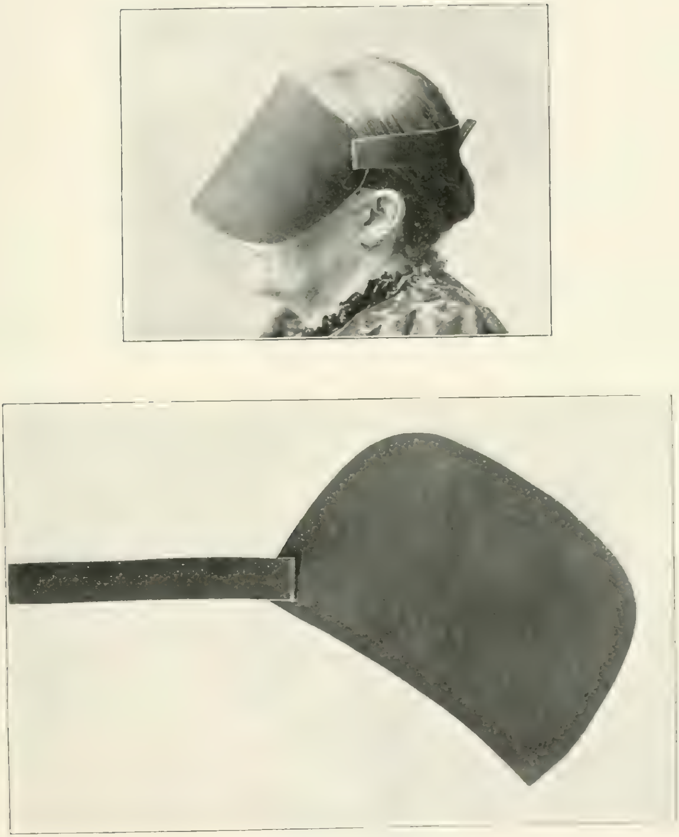
Illustrated.

It has been my custom for several years, during the after treatment of cataract cases, to cover both eyes for three days only; then if the case is progressing satisfactorily, the unoperated eye is uncovered, but the operated eye is kept covered for three days longer. Pads of cotton and a narrow roller bandage of Shaker flannel are generally used for this purpose. Sometimes the bandage is dispensed with and narrow strips of isinglass plaster are used to hold the pads of cotton in place. In addition to these dressings, an aluminum shield is placed over the operated eye and secured in place by tapes passed around the head. This shield is worn constantly during the first six days. At the end of the third day, when the unoperated eye is left uncovered, a large paper shade, such as is described below, is placed in front of the eyes and worn for ten days.

I have been using a shade of this sort for all cataract cases since my return from a trip to Europe about four years ago. It is fashioned after those I saw used by Dr. Argyll Robertson at the Royal Infirmary at Edinburgh.

The kindly and courteous attention which this scholarly gentleman bestowed upon me, an unknown American doctor in a strange land, is worthy of a more fitting tribute of praise than simply this short article describing his paper shade. For the delightful hours spent with this famous specialist at his clinic is one of the cherished memories of my first and only visit to the interesting city of Edinburgh.

On account of the extreme simplicity of these shades the thought of writing about them never occurred to me until a few days ago, while I was preparing one for a patient, for whom I had recently extracted a cataract. I believe that all who operate for cataract are sufficiently inter-



A Simple Eye Shade.

ested in the little things connected with the operation, the after treatment, and the general comfort of the patient, to be glad to learn of this easily prepared convenience.

The two photographs presented herewith give a good idea of the shade and the way it is worn. The lady who appears in this photograph is the patient referred to above. This sitting was made just seven days after the operation.

The shades which I saw used by Dr. Robertson were made from dark colored manilla paper. A piece 5x10 inches, with the two lower corners rounded, forms the shade. A strip of the same 1 inch wide and 12 to 14 inches long, is pinned or sewed to the upper corners, thus forming a head band which encircles the head in such a manner as to bring the shade into about the same position that a very wide, long, and nearly vertical visor to a cap would occupy.

I have found a very light weight, black cardboard to be admirable material from which to construct these shades. The extreme light weight, together with the cleanliness and cheapness and ease with which a shade of this sort may be procured, will, I think, commend it to all operators.

TWO CASES OF METHYL ALCOHOL AMAUROSIS FROM THE INHALATION OF THE VAPOR.

BY R. S. PATILLO, M.D.
Instructor in Ophthalmology, Post Graduate Medical School.
CHICAGO.

The following cases* of toxic amblyopia occurring in my practice present some points of unique interest in that they differ materially in the manner in which the poison was taken into the system; namely, by inhalation. On reviewing the literature at my command, I cannot find any similar cases reported.

J. G., æt. 36; painter. On July 10, 1899, was engaged with his partner, Mr. E., in shellacing some new beer vats. The shellac was mixed with Columbia spirits, said to contain 97-98 per cent alcohol, sp. gravity 0.796, three coats of which were applied to each vat. The vats, eight in number, size 20x11 feet, were inclosed, except a vent-hole of about 18 inches square. The temperature of vats was about 70° F. After working four days Mr. G. had to discontinue on account of nausea, dizziness, and severe frontal headache. On the fifth day he noticed his sight was fogged, and on the sixth day he became totally blind. Total blindness lasted for a week, when gradually sight returned until he could see to go round, and to read large headlines of a paper. Two weeks later sight again began to fail, until the following conditions remain:

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*These cases were presented to the Chicago Ophthalmological Society, November 13, 1899, by Dr. Casey Wood.

R. E., vision fingers at three feet; optic disk has a bluish tint; retinal vessels normal; tension normal.

L. E., light perception only; optic disk opaque white; vessels slightly contracted.

Previous history: Sight had always been good; was a moderate smoker, and only stimulant used was an occasional glass of beer. No history or symptom of specific trouble.

R. E., æt. 31; painter; J. G.'s partner; has been at similar work for several years, but this was the first time he had mixed the shellac with Columbia spirits. After working for two weeks, symptoms similar to those stated in the case of J. G. set in, and he had to discontinue work. The day following he noticed his sight dim, and on the next day became totally blind. He was unable to see for twenty-four days, and then sight gradually improved until the following conditions exist:

Vision—R. E., fingers at 3 feet.
L. E., fingers at 1 foot.

In both eyes retinal vessels normal; capillaries on the disk well marked; disks opaque white.

Previous history: Sight had always been good; was a very moderate user of tobacco and stimulants. No signs of any specific disease.

The Cause of Blindness in Children.—Dr. Förster, director of the Ophthalmological Clinic at Breslau, has recently published some instructive statistics regarding the causes, other than ophthalmia neonatorum, of blindness in children. According to these, injury to the eyesight, with consequent blindness, is mostly occasioned by carelessness, more than 20 per cent of these cases being caused by playing with sharp instruments and 12 per cent by malicious injury, such as blows, stone-throwing, whipping, and unsuitable means of correction. Similar results are shown by the statistics of most other ophthalmological clinics. Boissoneau, of Paris, reports that of nine hundred and thirty-nine children who were blind in one or both eyes, more than three hundred and fifty were injured by shooting and by explosion of percussion caps.—*New York Medical Record.*

A CASE OF OBSTRUCTED RETINAL CIRCULATION, WITH A SERIES OF PICTURES SHOWING THE CHANGES IN THE VASCULAR SYSTEM DURING ITS REESTABLISHMENT AND THE FORMATION OF NEW VESSELS IN THE RETINA.

BY SWAN M. BURNETT, M.D., PH.D.,
Professor of Ophthalmology and Otology in Georgetown University,
WASHINGTON, D. C.

Illustrated.

In presenting the following case I do not use the term "embolism of the central artery" advisedly, because I am not sure the obstruction was due to an embolus. In most of its clinical features, however, it presents the characteristics usually found in cases considered as due to that cause. I do not remember to have seen any pictorial representation of the sequences or changes in the circulation which occur in the fundus following an accident such as is here recorded, nor have I before had an opportunity of observing such a case from the very beginning through a number of months. The alteration in the vascularization during the progressive stages of reëstablishment of the circulation seem to me very remarkable, and it is on this account principally that I have reported the case. The drawings are not claimed to be photographic in their accuracy of detail, as they are made from sketches taken during consultation hours, but the main and striking features are such as were observed. The development of apparently new vessels, and the change in course, or total disappearance of those already present, strike me as the interesting features of the fundus pictures.

Senator M., 85 years old, was sent to me by Dr. S. C. Busey, of this city, on the morning of May 9, 1894. He reported that on coming down stairs to breakfast, some three hours before, he noticed that he was practically blind in the right eye—the one on which he had hitherto relied almost altogether, the vison in the other being defective. There was no pain nor other uncomfortable sensation complained of. Both pupils were small, but of equal size. In the right eye nothing remained of the visual field except a small sector outward and slightly downward. The pupil was dilated with homatropine for examination. The lens was found to be clear with the exception of some opacity at the inner margin. The other media were normal. The outline of the optic disc was distinct, but all the retinal vessels present were much reduced in caliber. The branch of the artery running upward was visible only as a fine red line, and was represented by a white cord just above the disc for the distance of a disc diameter.

(See Fig. 1.) The two arteries running downward were also very thin, assuming that the one running to the temporal side to be an artery. The veins were somewhat but not markedly tortuous, except the one running down and to the temporal side. This had the characteristic beaded appearance from its origin on the disc to its first bifurcation, two disc diameters below. There was no edema of the retina and no cherry-red spot at the macula—nor was there any appearance of either during the whole time the patient was under observation—this usual feature of embolism being entirely absent. On

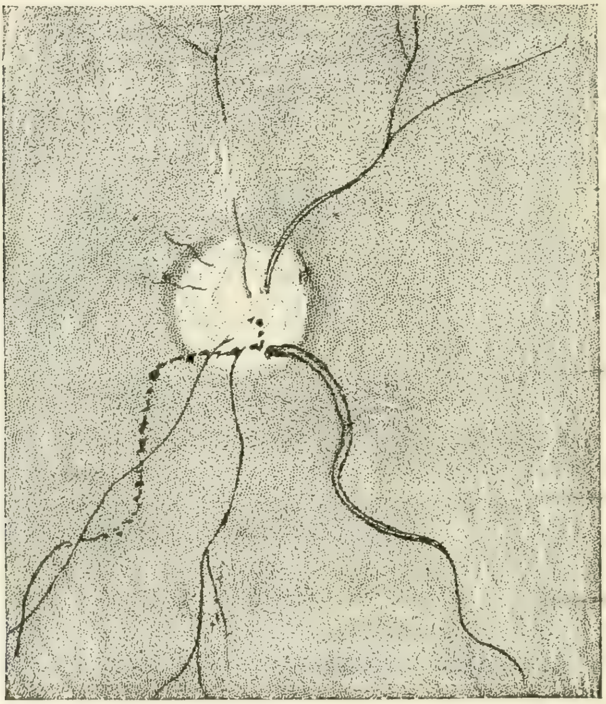

Fig. 1.

the 10th the veins seemed a little fuller, the arteries remaining about the same. The clear field of vision, roughly tested, had increased somewhat in size, and in it vision without a glass was 5/24. 11th—The *left* eye was examined, under homatropine, for comparison with the condition of the right. The fundus was normal, and the retinal vessels were about double the size of those in the right. The lens had striæ running from the edge up to near the center, which was the cause of the diminished vision in that eye. The condition of the right had changed to that shown in Fig 2. The veins were now much enlarged and tortuous, and there were two hemorrhages near the lower edge of the disc, coming apparently from the ruptured walls of the lower veins. The small line to the temporal side, which was taken for an artery in Fig. 1, had assumed a size and tortuosity like that of the veins. The superior artery had still a discontinuance of blood contents in two places. The lower artery remained practically the same. The small temporal vessels were unchanged.

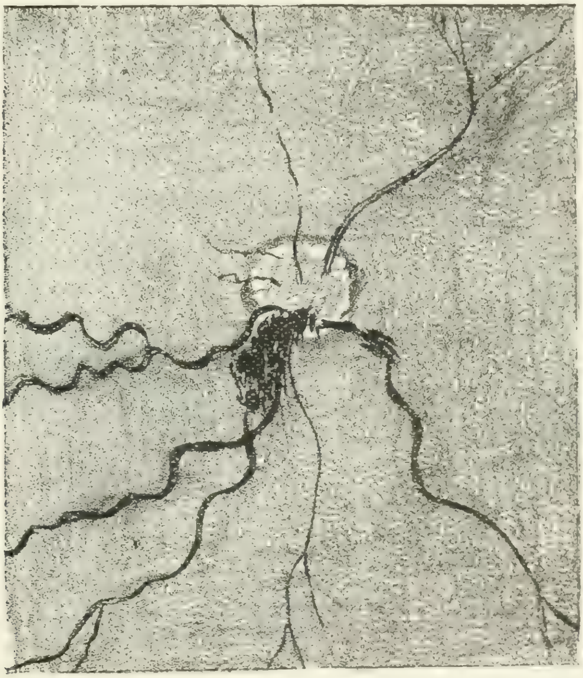

Fig. 2.

In the intact portion of the visual field, with +1, V=5/18. 12th and 14th—Conditions practically the same, except that the hemorrhages are being absorbed. There is, however, a faint exudation from the vein running up and in. The upper end of the superior artery is larger and more sharply rounded. 16th—Condition same. 19th—Hemorrhages disappearing. All the veins are narrower on or near the disc than at the periphery, and are losing their tortuosity. Upper artery still visible only as a faint red line—V.F. same; with +7 reads No. 2 at 12 inches. 24th—Further narrowing of the veins, which are still larger toward the periphery. At seat of hemorrhage outlines of vessels not so clear. 30th—The condition is shown in Fig. 3. The disc is much whiter than normal. Upper artery is broken in two places, and otherwise only a faint red line. At

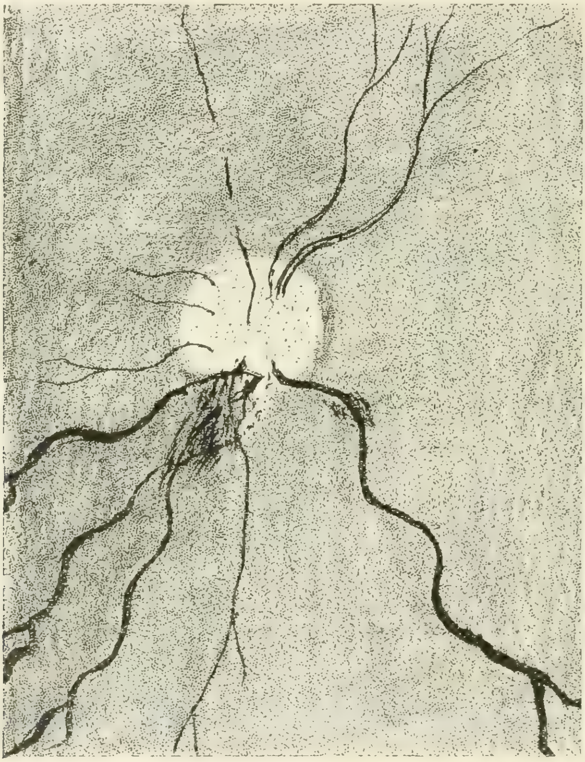

Fig. 3.

seats of hemorrhage still some dimness of outlines of vessels. The small temporal vessels have been increased by one above the two others. June 12th—Disc increasing in whiteness. Lower artery represented by a white streak from edge of disc to its first bifurcation. (Fig. 4.) Upper artery in about the same condition. A large vein--apparently one of the smaller temporal veins—much increased in size and length, with tortuosities at its extremity. All the veins increased in size, and apparently one added up and in. Vision and V.F. unchanged.

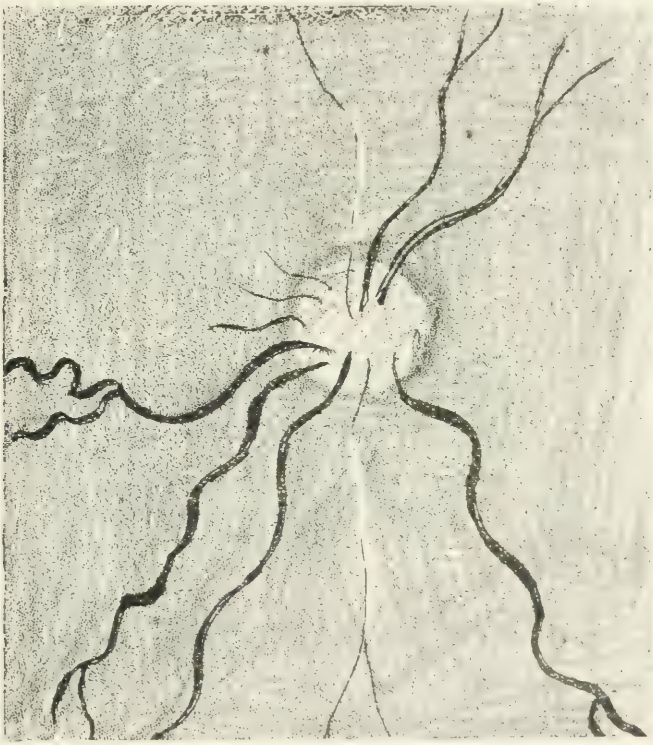

Fig. 4.

The patient now went to his home in a distant state and was not seen again until January 7, 1895, when an examination revealed the rather extraordinary condition shown in Fig 5.

The disc is quite white. Instead of an artery running almost directly down, as was the case in the former pictures, there are what seem to be two arterial branches, one running down, and in the other down and out, the latter possibly being a refilling of the artery, shown in Fig. 1, running approximately in the same direction, but which disappeared after a few days. This one has a white border for a part of its course. Of course there is still the question as to whether these were really arteries, or only shrunken and collapsed veins. The position of the upper artery is marked by a narrow red cord, with a white streak occupying a large part of its visible length. This white streak is bordered by a red mass of rather open texture, which does not seem to extend far into the vitreous chamber. The mass has not the character of a blood effusion, but seems to consist, at least partly, of very small capillaries bunched together. The mass near the upper inner edge of the disc has the same character. The two small, round, black spots

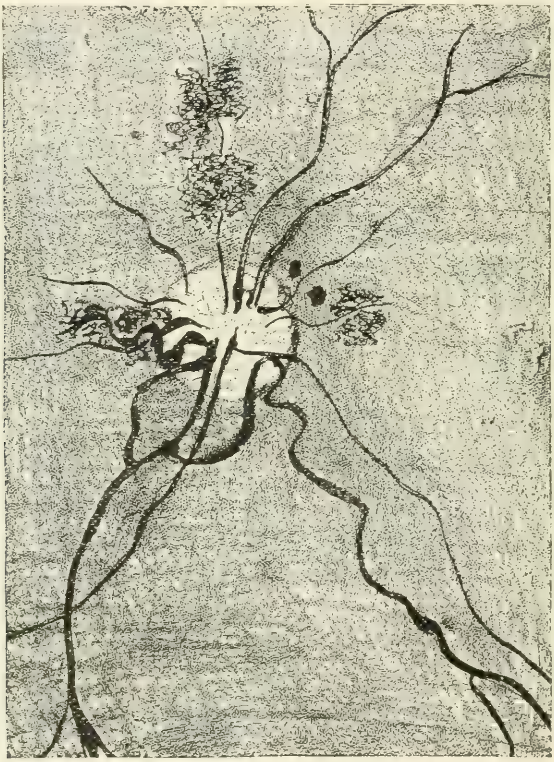

Fig. 5.

in the same vicinity are pigment deposits. The lower, small vein, running to the temporal side from the disc, is very tortuous during its short course, and has some of the same red mass about it. The unusual course of the lower vessels is so apparent in the figure as to need no further description. Vision about as at last report. The visual field was taken by the perimeter, and was found as shown in Fig. 6, from which it has not materially differed since the tenth day after the attack.

The patient, I learn from a communication from Dr. Busey, has not had any organic heart trouble; but his circulation, on account of his advanced age, is not in good condition, and he has had several illnesses recently due to that. He inclines to the theory of an embolism as the cause.

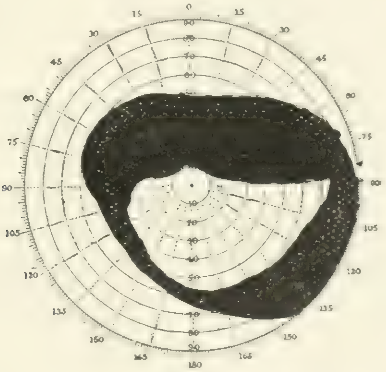

Fig. 6.

It is not perfectly clear, in this case, as to what the obstruction in the retinal circulation is due. It is not necessary, however, to call in an embolus brought from a distance to find a lodging in the central retinal artery to account for it.* It is much more likely that the stoppage was brought about by a thrombosis, caused by a temporary suspension or slowing up in the blood current, the result of a feeble heart and atheromatous arterial walls, or to an effusion pressing on the optic nerve anterior to the point of entrance of the blood vessels. It will

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*There seems to be an increasing skepticism among the profession as to embolism of the central artery. The latest expression of this is found in the article on the "Diseases of the Circulatory System," by Prof. Haab, in Norris & Oliver's System, Vol. IV, 1900. On page 501 he says: "Since examining anew all the literature pertaining to this affection, the writer not only reiterates his expressed opinion, but goes a step further and says that *the entire theory of embolism of the central artery of the retina requires fundamental verification in order that light be shed upon many of its obscure points.*"

be observed that the stoppage was not complete, for there was a small sector of the visual field left intact, even from the beginning, which has remained practically unchanged. This corresponded to the upper inner portion of the retina, including the macula lutea. To the upper inner portion of the retina no artery was seen to go. The vein corresponding to this region, however, suffered less changes throughout than any of the others, and it is to be inferred, from this, that the circulation was but little interfered with in that locality. There was nothing to indicate the existence of a cilio-retinal vessel. The absence of edema of the retina, and the cherry red spot at the macula are also unusual.

The formation of new capillary vessels, principally along the course of the retinal arteries, which had been closed, coming on many months after the initial lesion, and subsequent to the complete disappearance of the hemorrhages, is an interesting feature of the case, taken in connection with the more recent studies of the so-called *retinitis proliferans.* The general consensus of opinion, at present, is that these changes in the retina and vitreous, consisting of membrane and vessel formation, are in some way directly connected with extravasated blood. Yet, in the case here reported, the most extensive of the new formation of vessels was along the course of an occluded artery, where there had never been a hemorrhage, and they were not observed at all at the location where hemorrhages had taken place. Nevertheless, it cannot be doubted that this new formation of blood vessels is a part of the pathological change, and the result of a morbid process existing in the retina.

In this connection it may be of interest to call attention to some investigations made by Tornatola of Messina, contained in a paper read by him at the late Internat. Med. Congress at Moscow, and published in the *Ann. di Ott*, for September and October, 1897. These are concerning the development of the vitreous in the embryo. He finds in the embryonic vitreous two distinct forms of cell: *a.* A large cell with granular nucleus and homogeneous protoplasmic contents, identical with the mesodermic cells of the embryo. These cells undergo modification and evolution, and finally form the blood vessels of the embryonic vitreous. He denominates these the *vaso-formative cells*, which serve but a temporary office in the formation of blood vessels. *b.* The small spherical corpuscles, finely granular, ordinarily without a nucleus, and about the size of a lymphoid cell. These appear at a relatively advanced period of embryonic life, and persist to complete development, forming the proper substance of the vitreous. He considers, therefore, the vitreous to be an ectodermic production — a secretion of the retinal cells —

a substance analogous to the "tissue of secretion" of Hensen, Emery, and Ficalbi. It is not a true tissue, however, since it is not constituted of cells and an intercellular substance.

He then calls attention to a tendency, more or less well recognized in pathologic change, for tissues under certain conditions to revert to its embryonal forms; giving instances observed by Ciacco and the Duke Theodor Karl, in retinitis albuminuria, in which there were found, in the vitreous, large numbers of delicate fibers starting from the posterior portion of the retina, and proceeding from there forward in the direction of the lens, and which he regards as examples of a reversion to the cells (*b*), under the influence of a pathologic process. An application of the same law could explain the appearance of blood vessels by a pathologic process, which would call into activity the function served by the *vaso-formative cells.* Under this theory, it would not be necessary to assume that the blood vessels following hemorrhages are necessarily a transformation of the substance of the blood clot itself into vascular tissue. All that is essential is some process which shall recall into activity the vaso-formative cells. What the necessary conditions for this are we are yet in ignorance.

But the most marked feature of the eye-ground picture is the final change which took place in the vascularization of the lower portion of the retina as shown in Fig. 5. Of the descending artery, of which there were remnants visible in Fig. 4, there is not the faintest trace. On the other hand, the vessel to the right, which seemed to be a vein, has narrowed to the caliber of an artery. The descending vein on the left side has undergone great changes near the disc, forming loops and anastomoses, and a large branch is given off to the right, running up over the edge of the disc, and then descending in a tortuous manner by the side of the other straight vessel on that side. Whether these are newly formed vessels, or old vessels filled out, I find myself unable to decide, though the probabilities seem to lie in the direction of new formation.

THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, DECEMBER, 1899. NO. 12. NEW SERIES

EDITORIALS.

RECENT RESEARCHES ON THE GENESIS OF QUININE AMAUROSIS.

In the OPHTHALMIC RECORD for August, 1898, the writer summarized our knowledge of experimental quinine amblyopia, making special reference to Ward Holden's researches communicated in the preceding July to the American Ophthalmological Society. This observer, it will be remembered, found that, to quote his own words, "with the lessened but not obliterated blood supply due to spasm of the vessels in quinine poisoning, the less resistant elements of the inner layers of the retina, the ganglion cells and nerve fibers, break down, while the cells of the inner nuclear layers are not visibly affected. An ascending degeneration of the optic nerve fibers follows the retinal changes. No histological alterations at this period are found in the retinal vessels, or in those of the optic nerve." This atrophy of the optic nerves Brunner and the writer had long before demonstrated in their experiments, performed at a time when the newer histological methods employed by Holden were unknown, and, therefore, is probably to be regarded as a *secondary* effect of the toxic action of this agent, which, according to Holden's researches, exerts its primary influence on the deeper portions of the cerebral layer of the retina, that is, on the ganglion cells and the nerve fibers.

In this editorial no mention was made of the paper of De Bono, published in the *Archiv. di Ottal.*, Palermo, 1894, II, pp. 171–227, in which, on the basis of experimental researches, he announced that the retinal ischæmia evident in quinine poisoning was not the sole cause of the functional disturbances, inasmuch as the latter may disappear while the ischæmia still remains, and in which he ascribed the visual disturbance to alterations in the percipient end-elements of the optic nerve, because in frogs poisoned by quinine there is lack of movement in the pigment molecules of the pigment epithelium. In other words, he believes that quinine produces a paralyzing influence on the neuro-epithelium of the retina.

Recently De Bono (*Archiv. di Ottal.*, Palermo, 1899, VI, pp. 398–409) has renewed the discussion, and has presented further experimental proof of his theory, because he felt that its firm substantiation required additional evidence that the alterations were present only in the neuro-epithelium. Moreover, he desired to employ the refinements in histological investigations which had appeared since his original paper. He, therefore, induced acute poisoning in dogs by means of hypodermic injections of quinine, brought about blindness in two hours, killed the animals in this condition, and removed the eyes, the optic nerves, and pieces of the cerebral cortex. These tissues were properly prepared for microscopic examination and stained in various ways, particularly with methylene blue, with thionin, and with Delafield's hæmatoxylin. The cerebral cortex was treated by the Golgi-Cajal method, the optic nerves after the manner of Marchi, and other specimens were stained with safranin. Similar tissues from normal dogs were treated by the same methods.

Under the microscope the ganglion cells of the retinas of the quinine dogs, prepared in this way, killed two hours after the injection of quinine in sufficient quantities to produce acute blindness, presented exactly the same appearances that they did in normal dogs. Only after a long time (four days) was De Bono able to note a slight breaking down of the chromatic bodies, and he never met with any profound alterations in the cellular protoplasm. In the other elements of the retina no deviations from the normal could be observed. On the other hand, he found extensive lesions in the ganglion cells of the cortex, even after the lapse of only two hours, with marked alterations in the chromatic bodies and changes in the protoplasm. The optic nerves examined after the manner of Marchi exhibited no degeneration, and the preparations stained with safranin gave the same negative result.

He, therefore, concludes that even if it is admitted that some of the fibers of the optic nerve, long after the occurrence of intoxication, show nutritive changes, and even if these changes are constant, they are not sufficient to invalidate his hypthesis that quinine paralyzes the neuro-epithelium of the retina to the exclusion of the other tissues of this membrane, and he is satisfied he has given a rational explanation of the pathogenesis of acute quinine blindness, and one, moreover, which furnishes a basis for therapeutic consideration.

That the ganglion cells of the retina are not demonstrably affected as early as two hours after a single toxic dose of quinine, is evident also from Ward Holden's experiments. Such lesions first appeared on the third day in the form of degenerative changes—changes, however, which De Bono failed to find in his animals as late as the fourth day. This discrepancy might at first sight be explained by the fact that he gave but one dose of quinine and did not repeat it. Indeed, he objects to the repetition of the dose, because he maintains it produces a subacute form of quinine poisoning, and not true acute toxæmia. That this explanation is not entirely satisfactory is evident from the fact that Ward Holden found ganglion cell changes in a dog killed on the third day after a single toxic dose, some degree of vision having returned, and in a dog killed on the fourth day after four injections. The first dog was killed with chloroform, the second by bleeding. Two observers, however, may readily disagree in their interpretation of beginning alterations in the retinal ganglion cells, when we remember that there is not absolute accord in regard to the histological structure of these bodies: witness, for example, the varied descriptions of Dogiel, Bach, and Lodato.

Later on, we know, there is complete disappearance of the ganglion-cell layer and degeneration of the optic nerve fibers. In Holden's dogs the latter lesion began on the seventeenth day, and in the writer's animals it was marked before the end of a month, atrophy being almost total at the end of two months. Curiously enough, De Bono failed to observe this atrophy, but again it must be remembered that his observations relate particularly to the very earliest stages of quinine amaurosis when this is caused by a single dose, and not to what he calls sub-acute or chronic quinine poisoning, that is to say, to quinine blindness produced and maintained by a repetition of the dose of the drug. That repeated administrations of quinine, however, are not necessary to produce optic nerve atrophy is evident from one of Holden's experiments, in which the dog became permanently and totally blind from a single injection, with degeneration of the medullary sheaths of the optic nerves.

In his first quinine research (1890) the writer described thrombi in the central vein of the optic nerve, and in his second paper (1891) thickening and collapse of the nutrient arteries of the nerve, and occasionally (two specimens) obstruction of the central vessel with a partially organized thrombus. De Bono, who also has found thrombi in the veins of the sheath, thinks such lesions might serve to explain the permanent blindness which occasionally results from quinine. Ward Holden, on the other hand, failed to discover histological alterations in retinal vessels or in those of the retina. To quote from his paper: "The thin-walled central vein of the optic nerve was often found empty and collapsed, and the delicate connective tissue about it, with its small vessels, owing to its being stretched and apparently increased in amount, sometimes suggested the appearance of an organized thrombus in the vein, but this same appearance was noted also in healthy dogs." Evidently the vascular changes in quinine amaurosis require further investigation, although even if they occur, they must be of secondary importance.

If all of the observers are correct, the order of events in quinine blindness would seem to be the following: Paralysis of the neuro-epithelium of the retina manifest two hours after the administration of the toxic dose; degeneration of the ganglion cells and nerve fibers beginning on the third day, which gradually increases; and, finally, degeneration of the optic nerve fibers beginning as early as the seventeenth day and going on to complete atrophy, not only of the optic nerves but of the tracts.

G. E. DE SCHWEINITZ.

THE GENERAL PRACTITIONER AS A REFRACTIONIST.

There seems to be a growing belief that the "refracting optician" is capable of doing much harm. His lack of anatomical and physiological knowledge renders him unfit to prescribe for any organ of the body, and especially for the eye, since it at times has important relations with other organs remotely situated from it. It is conceded that many physicians disregard all this, and openly recommend patients to the optician to have their eyes examined. The question is, why do physicians do this, and what are we going to do to prevent it? In proposing a solution of these questions we are incited neither by jealousy nor a feeling of pique. We feel that the ophthalmologist does not lose very much in the long run, as sooner or later these same cases come to him. We are prompted by the feeling that we would like to save these patients who consult us as a last resort, the suffering, time wasted, and the money expended in a vain endeavor to get "something for nothing." Our prognosis in many cases might be more favorable could we have seen the patients at the time they first consulted the optician.

In view of all this we are confident that the ophthalmologist in his war against the "refracting optician" is prompted by a desire to protect the public against the dangers of incompetency.

We do not feel that the ophthalmologist alone can successfully compete against the advertising methods of the illegitimate optician. We cannot educate the public to understand the risk they run in having their eyes examined by opticians. We must have the assistance of the strong arm of the medical profession. We must convince the general practitioner that the medical profession alone is competent to do refraction work. The general practitioner, because of his close relation with many families, is in a position to do much educational work in this line. We must induce him to take more than a passing interest in this subject. To do this he must become a participant. We have held out the impression that the subject of refraction is exceedingly difficult, and our many technical terms, symbols, and abbreviations have caused the general practitioner to be proud of his ignorance of the subject. As a matter of fact, a careful reading of Valk's little book on refraction, and a little practice on eyes under a cycloplegic, will divest the subject of many of its terrors, and refraction will be found to be a comparatively simple problem in addition and subtraction. We would suggest that instead of discouraging the general practitioner we encourage him to enter into the field with us. Induce him to buy a trial case and an ophthalmoscope, and a simple concise work on refraction, and persuade him to teach his patients that physicians only are capable of fitting glasses. His stubborn cases can be referred to the ophthalmologist. These are the only cases we get now. Why should the general practitioner not fit the simple cases instead of the optician ? He is in position to recognize diseased conditions of the eye that the optician would not recognize. He is also in a position to recognize certain symptoms, for which the optician would at once prescribe glasses in hopes of their correction, as coincident with and not dependent upon eye strain. The optician learns to do refraction work in a remarkably short time. The physician certainly should be able to do the same. We feel confident that if physicians generally would do this it would only be a very short time until the "refracting optician" would be no more. All physicians are not so busy that they could not afford to devote some time to this subject. Some are too busy, and others will some day be too busy. Well and good, they will not then need to do it, for they will have accomplished the work of convincing the public that the fitting of glasses should be done only by medical men. It no doubt would be difficult to persuade some of our city friends to take up refraction, but in the country the medical men can be induced to do it, and it is in the country that the laiety is most ignorant on this subject. It is there that the traveling optician reaps his richest harvest.

There is another reason why this would be of advantage to the ophthalmologist. Our specialty is being rapidly overcrowded by men who take a few weeks' course on the eye at some post-graduate school, and then launch themselves in ophthalmology as specialists. If the general physician could be induced to take more interest in the eye, he would be in position to judge of the ability of the specialists to whom he referred cases. The result would be that ophthalmology in a short time would not be so attractive a field for the young medical graduate with a few weeks' post-graduate attachment as his credential. BLACK.

THE OCULIST VS. THE OPTICIAN.

There are always two sides to each and every question, but according to our understanding of the subject, we are very apt to express our opinion or to place ourselves on that side of the question that will meet our personal views and interests. But when we are asked to consider or to decide a question that must, in many ways, affect the standing and the business interests of many others, and in which we would propose some legislative action, then we must not only consider our own personal desires, but must stand on the broad platform of the best interests of the many, and we must endeavor to look on all sides of the question in a practical manner. The discussion now existing in the relation of the oculist to the optician cannot be settled by one side or the other, and the resolutions of the American Medical Association will by no means assist us in the solution of this question. They but express the opinion of that learned body, while they have no vital force whatever, any more than the opposite views set forth by the opticians.

I have given the matter very careful thought for some time, and must confess that I have yet failed to see a logical solution of the question, or in other words, a way in which we may present this subject to our legislative bodies so that they may take some action in a practical form.

The first practical question that presents itself is: Should the Optician be prevented from prescribing glasses? This must be answered in the negative, because, by so doing we would place a restriction on too many persons, which would not be tolerated and that in the end would only react on the oculist. In making this assertion I refer to the large majority of men and women who have some simple error of refraction, as hypermetropia, or myopia, or an emmetropic eye, with a perfectly normal ocular apparatus, and in whom, as age advances, simply require the aid of a convex glass to assist the vision at the near point. Hence any laws that would compel this large body of men and women to seek the aid of the oculist that they may have glasses seems to me to be useless and unconstitutional. But the question then arises, "where shall we draw the line?" May we not find it in this way? In as much as we have laws that prevent the prescribing of drugs by the pharmacists, so we may have laws that shall permit the opticians to prescribe glasses only for such cases that shall meet certain requirements that are within his qualifications and skill. A rule that I understand is at the present time followed out by our best opticians. Now this is only one reason why the optician may prescribe glasses, and yet it seems to me the only one that can be urged in his favor and should be limited to those cases in which the vision as tested shall be found normal. Furthermore, trying to look at a matter in an unprejudiced light, I have endeavored to find out what the optician claims, and I fail to find anything but the fitting of glasses, and yet even in the correct examination of the refraction, in its various forms, requires a certain knowledge of, and ability for, the diagnosis of pathological conditions of the fundus, and is the optician qualified for this work? Granting that he can make the differential diagnosis, what then? He cannot treat the case and must send it to the physician, whom he claims cannot be fully prepared to correct refraction. Again, how can the optician claim the right to examine and to treat the motility of the eye and order his prisms for the various conditions of imbalance or a commencing paresis, for all this comes surely within the domain of physiology and the practice of medicine, and is frequently but the first symptoms of some grave central disease. Hence it seems to me there is no part of an oculist's work which can be relegated to the optician, except that of Presbyopia, which is well known to be only a natural condition of the human eye.

On the other hand—how many reasons can we advance against the examination of the eyes by those not fully qualified for the work? How many cases can we find in the record books of all ophthalmologists in which a positive injury has been done and the priceless vision of many has been permanently injured by the persistent and repeated selling of glasses to persons who have some serious condition of the ocular apparatus, or a pathological process in the tissues of the eye, until they have finally become discouraged and seek the aid of a physician. Then the process has advanced too far to be corrected or relieved. Take as an instance, those cases of simple incipient glaucoma; the patient has no pain, no obvious symptom in the eyes, but his vision is slowly failing, and he comes to the physician with the old story that he has tried so many glasses and has failed to be suited, but all the opticians sold them to him simply because they made him see better at the time ; so the disease has progressed until the oculist can only hope to preserve what vision remains by an operation. Can any one claim that such cases should apply to an optician? Yet only the past week I have received a wonderful pamphlet from an "opticist" (whatever that may mean), who claims to be fully capable of understanding all the laws of refraction, and who presents some surprising testimonials, yet he does not claim to know anything about the diseases of the eye, its motility or want of balance, or the conditions of the eyes that are shown by the failure of vision or an inability to use the eyes, and all this may be only indications that will eventually lead to complete blindness. Now I do not believe that we shall ever benefit ourselves by trying to control the trade of the opticians, nor by the "blowing of our own horns" as to our eminent fitness for the prescribing of glasses, but the subject must come within the domain of the practice of medicine, and hence is capable of some adjustment by suitable and just laws. The practice of medicine at the present day is too great for any one person to make himself fully familiar with all the conditions of the human system, and the investigation of the medical profession has so rapidly progressed in all branches that the advanced physician must, of necessity, devote his study to some branch or specialty, and standing almost alone. Among the many intricate problems it presents is that of ophthalmology. Hence when we claim the right to advance laws for the regulation of the practice of medicine, of which ophthalmology is a distinct branch, including the correction of all errors of refraction, we will find many physicians ready to take up the study of the diseases of the eye and its refraction, while on the other hand the optician can at no time be qualified to examine and prescribe for all cases. His work must be limited, until he has become a doctor of medicine.

Now we will never convince the general practitioner by any missionary labors, amongst them to refrain from sending his patients to the optician for glasses, as the majority seem to care very little about it. Until we can frame some just laws to meet the requirements, and only then may we expect our colleges to insist upon the importance of the refraction and the visual power in reference to the pathological condition of the eye, and also as the cause of the various reflex phenomena that are familiar to all advanced oculists. Ophthalmology has made such rapid strides in advancement during the last few years that to-day we can, with our objective methods, correct the refraction of nearly all our cases without the aid of any subjective methods, and in the ranks of the oculists we now find the "specialist in a specialty," or in other words, some physicians seem to be more particularly fitted for one branch of the subject and others for another branch, but all are fully competent to treat all cases, from that of the most simple refraction to that of the most advanced pathological condition.

Now does not all this seem to present two distinct fields? In one we have the physician, fully prepared for his work by special study and practical experience in our hospitals, devoted to this work in our post-graduate schools, and who should not try to fit glasses to fit the frames, while on the other side, the optician, who shall prepare himself by practical work in the shops for making the glasses, by combining them in a scientific manner, as prescribed by the physician, and lastly by supplying them to all persons in the cases of presbyopia, "pur et simple," in which the distant vision is found normal. May we not also suggest and I think it has proved that the optician who will confine his business within these limits and then demand and secure the confidence of the oculists, whereby he shall obtain all his prescription trade, will eventually establish a reputation which will not require the indescriminate selling of glasses to every applicant. The limitations that I have suggested are, in a certain measure, carried out at the present time by some of our best opticians and by which they enjoy the confidence of the best ophthalmologists of this city.

VALK.

SPECTACLED COWS AND SHOD GEESE.—In Bohemia, when geese are to be driven long distances to market, they are shod for the journey. The method of shoeing is as simple as it is effective. The geese are made to walk repeatedly over patches of tar mixed with sand. This forms a hard crust on their feet, which enables them to travel great distances without becoming sore-footed.

Even more useful than shoes for geese are the spectacles worn by the cows that feed on the Russian steppes. Forty thousand spectacled cattle so says the *Family Herald*, are now to be found in that region, where the snow lies white for six months in the year. The cattle pick up a living from the tufts of grass which crop above the snow. The sun shines so dazzlingly upon the white surface that many of the animals formerly suffered from snow-blindness. Then it occurred to some humane person to manufacture smoke-colored spectacles for the cattle. He tried the experiment, and it was successful. The animals are saved much suffering.

CORRESPONDENCE.

CREDIT WHERE IT IS DUE.

DENVER, COL., DEC. 7, 1899.

OPHTHALMIC RECORD:

My attention has just been called to the fact that my name has been appended to an article on "Diseases of the Lens" in Sajous' Annual and Analytical Cyclopædia of Practical Medicine. The article in question, which is an admirable one, was written, as I am informed, by Dr. Frank W. Marlow, of Syracuse. I ask assistance in having the credit for it bestowed where it is due.

EDWARD JACKSON.

ADDITIONAL CASES OF METHYL ALCOHOL AMAUROSIS.

DEPARTMENT OF THE INTERIOR.
BUREAU OF PENSIONS.

WASHINGTON, D. C., November 18, 1899.

DR. H. GIFFORD, OMAHA, NEB.

Sir: I have the honor to acknowledge the receipt of the reprint from THE OPHTHALMIC RECORD of your article on "Blindness from Drinking Methyl Alcohol" and to thank you for your courtesy.

Several cases of poisoning from drinking methyl alcohol have come to the notice of this bureau, and as they may be of interest to you from a scientific standpoint, I take pleasure in reporting the following:

Mr. ——, during the night of October 4, 1898, drank from 2 to 5 teaspoonfuls of methyl alcohol. Vision was much impaired on the following morning and became gradually less until October 10, when he consulted an oculist. An examination showed no fundal changes. Vision, =0. Under treatment with strychnine and iodide of potassium, vision improved slightly up to October 26, 1898, and then gradually faded away as it had come. The present condition is complete optic nerve atrophy.

Three men in U. S. Navy, on July 4, 1898, drank a mixture of methyl alcohol and benzine (quantity not stated), and were received on ambulance ship July 5, 1898. One man was totally unconscious and died within a few hours; another was perfectly conscious and suffered from gastro-enteritis only; while the third was semi-conscious; pupils widely dilated at first and remained so. On July 8 he regained consciousness, when it was discovered that he was totally blind. An examination by an oculist showed atrophy of both optic nerves. Under treatment with strychnine and iodide of potassium a slight improvement of vision was noted August 2. Subsequent reports do not record acuity of vision until October 11, 1898, when total blindness was shown.

Very respectfully,
J. F. Raub,
Medical Referee.

The Operative Treatment of Myopia—Rogman.—Rogman reports twenty-one cases of removal of the crystalline lens in high degrees of myopia. In the performance of the operation the author makes a preliminary discission, exercising great care not to wound the hyaloid membrane of the vitreous, and to avoid the escape of any of the aqueous humor. The lens is removed several weeks later by the suction operation of Teale. The author claims that his results are most excellent, only one eye being lost as a result of the detachment of the retina eight months after the operation. The difference in refraction of the eye produced by the operation ranged between 16 to 26 dioptres. With but one exception the acuity of vision without correcting lenses was better after the operation than it was before the operation with glasses, the degree of vision with glasses after the operation ranging from 5/10 to 5/30.—*Annals D'Oculistique.*

Colloidal Silver (Collargolum) in Gonorrheal Ophthalmia.—Schlossmann (*Therapeutische Monatshefte*, May, 1899), from an extensive experience with colloidal silver as a local application in gonorrheal ophthalmia, concludes that it is the best remedy at our disposal in the treatment of this obstinate affection. He recommends a 1 per cent to 2 per cent albuminous solution, to be applied to the conjunctiva by means of a camel's-hair brush. The instillations, he states, are entirely painless. Improvement usually began with the first application, and in some instances the children were discharged cured after four or five days. (Collargolum is the name given to an allotropic form of silver, which is said to be nonpoisonous, and which is permanently soluble in water and albuminous fluids. It has been used somewhat extensively during the past year in the form of an ointment (unguentum Credé) as an inunction in various septic and inflammatory affections.)

REVIEWS.

NOTES ON A RARE EPITHELIAL (HORNY) GROWTH ON THE UPPER EYELID OF A FEMALE.

BY DR. VIEUSSE.

(Translated from the *Recueil d'Ophtalmologie*, 1899.)

I noticed, last January, an epithelial growth of exceptional character on the outer surface of the upper eyelid of a young woman. The patient, aged 27, consulted me on the 27th of that month, and begged to be relieved of this tumor, which had developed during the previous two months.

On examination I found an excrescence measuring 1½ centimeters high by 1 millimeter in breadth. It occupied the center of the upper eyelid, and projected at right angles to the surface from which it protruded; it was soft to the touch, caused neither pain nor annoyance, and was freely movable in all directions on pressure of the finger.

The patient suffered no trouble or inconvenience, but desired its removal to please her husband. This was easily done by slight traction on the tumor, and snipping the fold of skin with a scissors. A few drops of blood only were lost, and the patient departed. When seen two months after she showed no sign of a return of the growth.

The examination of the neoplasm showed the following characteristics: It is soft throughout, its external surfaces a grayish white, resembling the cuticle of the eyelid to which it had grown. Sections made for the microscope showed that the entire neoplasm was surrounded by an outer covering formed of connective tissue, the fibers of which did not extend completely around the tumor, but interlaced with other fibers at intervals, so that this external layer seemed formed of an interwoven network. Inside this external investment were four lobes of different dimensions: one large one forming, superficially, more than one-half the tumor; another about one-third the size; one about one-half the size of the latter, and the fourth twice as small as the third lobe.

These lobes are completely separated one from the other by fibrous tissue. On examination their structure is found to vary, but distinct points of resemblance are perceived in their gradual evolution.

The larger lobe we find to be formed of concentric lamina completely surrounding the lobule. Approaching the center these layers gradually lose this form of arrangement, and further on the original structure is lost, the layers disintegrating from the periphery to the center, and gradually show signs of degeneration and decided loss of all structural formation.

The next lobe proves, on examination, to be of similar conformation, the layers undergoing degeneration as in the former, but the center of the lobe containing a yellowish substance.

The other lobes are quite similar in structure, with this difference that the degeneration of the tissues about the center is less advanced. The different lamina forming each lobe seem to have no definite structure.

It would have been interesting to note the gradual development of this epithelial growth, and how the different elements of the skin took part in its production. To this end we had intended making longitudinal sections of the neoplasm on a level with its point of adherence to the skin, but the portion preserved for this purpose was unfortunately lost. However, the above description will permit one to form an opinion of the nature of this growth. It is quite evident that it bears no resemblance to the papillomata, and that it can only be considered of a horny or epithelial character. In favor of this hypothesis we have its lobular form, consisting as it does of several lobes separated by intermediary tissue, breaking down about their center as we see in certain epitheliomata, and especially the pearly form. On the other hand there are points of dissimilarity. There is nothing of a decidedly epithelial character in this new growth. The different layers of each lobule are composed of lamellated tissue, forming a complete covering, thus in no way resembling an epithelioma.

Comparing it to a horny growth, these differences strike one, viz., the former are hard and noncompressible, while the neoplasm in question is soft and easily yields to pressure.

True, horny growths are formed of epithelial cells, which flatten out as they approach the center, and constitute but a single lobe with a central cavity. In our specimen we have just the contrary, that is, several lobes formed not by epithelial tissue breaking down as it approaches the center, but of laminæ forming a continuous covering for each lobe, these laminæ gradually degenerating from the periphery to the center, leaving an empty space as in the larger lobe, while the others contain broken-down tissue.

Having thus shown the points of difference and similarity between our neoplasm and epitheliomata and horny growths, we must seek to place it among one or the other of the epithelial formations. Basing our decision on careful study, we must class it among the horny growths, and in this opinion we are supported by Professor Audry, whose experience in all cuticular changes is widely recognized.

I have searched all the literature obtainable concerning these palpebral horns, and can find but three cases, all reported in the *Traité Complet d'Ophtalmologie* of de Wecker and Landolt.

M. de Wecker relates a case in which the horn developed in a man aged 40 years on his left lower eyelid, was fan-shaped, and measured fifteen millimeters in length by six at the base. It was removed by his assistant, M. Masselon. A drawing of it by M. Poucet is of little assistance in enabling us to determine the anatomical constitution of the neoplasm.

The case of Mr. Shaw was that of an Irishman, aged 56 years, with a horny excrescence, which had been growing for six years, measuring one inch and a half in length and the same in circumference at the point of adherence. A similar horn, which had occasioned a slight ectropion and lachrymation disappeared spontaneously, but was soon followed by a new excrescence which was removed by a circular incision.

Soelberg-Wells' case was of a man aged 76 years, the horn growing on the right lower eyelid, measuring one inch in length and about the same at the base, ten months having elapsed since its original appearance. Bowman removed it by a V-shaped incision, which was secured by a figure of eight suture.

In studying the evolution of these new growths de Wecker has decided that they are originally a form of wart susceptible of easy and rapid growth. We think, however, that this opinion needs to be more satisfactorily supported, these growths having the faculty of spontaneously disappearing. If, on removal, the pedicle be allowed to remain, they grow again rapidly, so that on operation it is advisable to pass the knife well around the excrescence at its base, completely removing its point of origin (de Wecker and Landolt, *Traité Complet d'Ophtalmologie*, Vol. I, p. 84).

Thus we see that these horny growths may give rise to inconvenience, as when on the lower lid they cause ectropion by reason of their weight, resulting in lachrymal obstruction and its troublesome consequences; though such a result is hardly likely to supervene if the upper lid be involved, the reverse being likely to occur owing to the force of gravity.

In the case of Soelberg-Wells the horn dropped away accidentally, but did not fail to reappear, as has been observed in such developments in other parts of the body, imitating the action of nature in animals whose horns are shed periodically and at a fixed period only to grow again.

From these facts we learn that to free a person from one of these horny growths we must not rest satisfied with simply removing the tumor, but we must as well destroy the matrix, and thus prevent a return of the trouble. This I was careful to do in operating on my patient, completely removing the tissue in which the excrescence had developed.

C. A. W.

LANDOLT'S NEW OPTOTYPES.

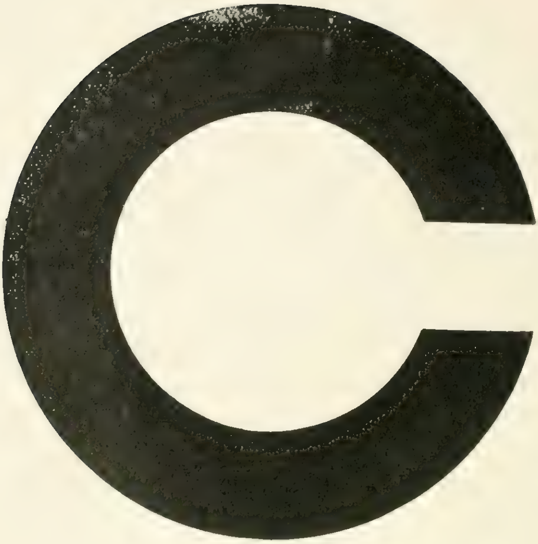
These optotypes are based on the principle universally adopted, namely, the determination of the smallest angle under which the eye distinguishes two points as being separated. The separation of the two points is represented by a solution in the continuity of black circles placed upon a white background. In order to make the tests conform as much as possible to those generally in use, Landolt has given to the circles the same dimensions as the letters of Snellen. His chart contains sixteen circles of different sizes, and is to be placed by preference at a distance of five metres from the eye to be examined. The numbers printed beneath the circles indicate the degree of the acuity of vision of the eye which at that distance just distinguishes the solution of continuity in the circle. In this manner No. 1 corresponds to the unit of acuity, or the normal, because the lacuna in the circle appears at five metres under an angle of one minute. For the distance of five metres he has chosen the following series of degrees of visual acuity :

0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.25, 1.50, 1.75 and 2.

These intervals, according to the necessities of practical usage, are smaller between the higher numbers and greater between the lower numbers. It is true that contrary to the series in common use, he has placed No. 0.15 between 0.1 and 0.2, the latter interval being a little too great.

In order to use Landolt's types at a distance other than five metres, the degree of acuity of vision which has been found is expressed according to the following well-known formula:

$V = \frac{D'}{D}$, in which D′ represents the distance at which the examination



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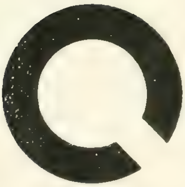

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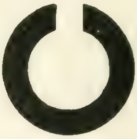

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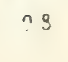

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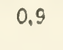

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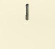

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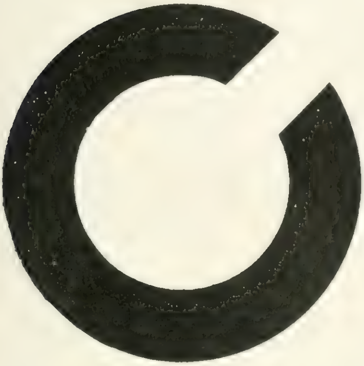
O. DOIN, Editeur.

OPTOTYPES LANDOLT



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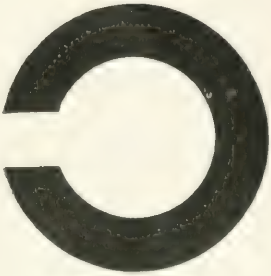

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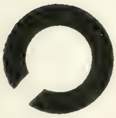

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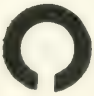

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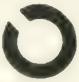

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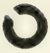

1,25

1,50

1,75

2

Imp. Monrocq, Paris.

has been made, and D the distance at which the nominal eye distinguishes the figure in question. This distance, D, for No.

0.1 = 50 mètres
0.15 = 33m33
0.2 = 25m
0.3 = 16m67
0.4 = 12m5
0.5 = 10m
0.6 = 8m33
0.7 = 7m14
0.8 = 6m52
0.9 = 5m55
1. = 5m
1.25 = 4m
1.50 = 3m33
1.75 = 2m86
2. = 2m5

When the visual acuity has depreciated below one-tenth, the chart may be carried toward the person examined until he just recognizes the space in the largest circle. The corresponding acuity being equal to 0.1 for the distance of five metres will be :

0.09 for 4m5
0.08 " 4m
0.07 " 3m5
0.06 " 3m
0.05 " 2m5
0.04 for 2m
0.03 " 1m5
0.02 " 1m
0.01 " 0m50

That is to say, the visual acuity is equal to twice as many hundredths of the normal as the distance equals metres. For determining the lower degrees of sharpness of vision this method is just as simple as that one which consists in counting fingers, and in addition, is more precise.

There is no difficulty in understanding the advantages which these test types have over letters and numbers. Letters and numbers can serve only for those who know them and who, moreover, are far from being equally facile in their powers of recognition. Landolt's circles are the same for everybody. They furnish, therefore, tests which are really international. Letters vary much in their visibility, hence, in order accurately to determine each degree of acuity of vision a large number of letters must be provided, which the patient can learn by heart and render the examination negative. In Landolt's types one sign alone suffices for each degree. It is only necessary to vary the position of the chart to change in one movement all of the tests. Again, they may be exhibited in a looking glass without the necessity of bringing them into an inverted position, as is the case with letters.

Other points of excellence which Dr. Landolt claims for his tests are: That each chart contains a greater number of tests for determining the acuity of vision than the charts generally in use: that the square form which he has given to the chart is better than the shape ordinarily employed, as it permits more perfect equalization of the illumination and prevents the person who is being examined from finding a point of comparison by means of which he is enabled to divine the position of the opening in the circle without really seeing it. The recognition of letters is a process of the most complex character, in which the sensation of light, the movement of the eyes, and above all, the intellect, have a part almost as great as the simple perception of form. Landolt's types, on the other hand, present to everybody the same simple problem and succeed more accurately than the letters, he thinks, in fulfilling the function for which they are destined.

Finally, Dr. Landolt believes that letters, in so far as their form and visibility are concerned, are far from conforming to the principle on which the determination of visual acuity is based. The power of distinguishing the space in his circles permits, on the contrary, the examination of the visual angle, that is the *minimum separabile.* G. E. DE S.

THE STUDY OF DISEASES OF THE EYE IN ANTIQUITY.—It is stated in the *British Medical Journal* that the second edition of Graefe-Saemisch's treatise on ophthalmology contains a very interesting essay on the study of eye diseases in antiquity by Professor Hirschberg. The oldest document bearing on the subject is a papyrus discovered at Thebes in 1872 by Ebers, who assigned it to a date about 1500 B. C., 1000 years before Hippocrates. From it we learn that there were at that time three kinds of medical practitioners in Egypt, namely, physicians, surgeons, and "thaumaturgists," whose memory we shall probably not calumniate by regarding them as the prototypes of our own faith-healers and miscellaneous quacks. The papyrus describes the three most important symptoms of eye diseases as excessive secretion, redness, and swelling. Among the remedies advised are myrrh, frankincense, acetate of lead, onion, verdigris, the dung of crocodiles and gazelles, brain of tortoise mixed with honey, woman's milk, but especially antimony. All Egyptians, as is shown by the boxes found with mummies, used ointments to blacken their eyebrows and eyelashes. Virchow, who analyzed the contents of one of these boxes, found that the collyrium consisted not of antimony, but of sulfate of lead. This circumstance appears to show either that the relatives of the deceased thought a cheap article good enough for the "corpse," that the undertaker swindled them, or that some one else got a secret commission on the little job.—*Philadelphia Medical Journal,* August 12, 1899.

REPORTS OF SOCIETIES.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting October 17, 1899. Dr. George C. Harlan, Chairman, in the chair.

Dr. S. D. Risley reported a case of *glaucoma* in a patient aged 77, coming on three years *after a successful simple extraction of cataract.* The immediate result after extraction was V. = $\frac{6}{5}$, which fell in six months to $\frac{6}{40}$ in consequence of thickening and opacity of the capsule. After a secondary operation V. rose to $\frac{6}{5}$, and remained there with a perfectly healthy eye for two and a half years. The patient then suffered a severe attack of influenza, during which the eye was red, probably from a mild iritis. Six weeks later she began to suffer transient attacks of dim vision, which became more and more frequent, culminating on the evening of April 23, 1899, in a pronounced attack of inflammatory glaucoma, with iris bombé, the projecting iris blocking the angle of the anterior chamber completely throughout the upper and inner two-fifths of the chamber. The cornea was steamy, the ball tender, tension + 2, and V. reduced to $\frac{1}{5}$. No satisfactory view of the fundus was obtainable. The field of vision was so narrow that the patient had difficulty in finding her way about. She was placed in bed, received a purge and salicylate of sodium, with the free use of eserin and gentle massage locally. This resulted in the rapid subsidence of all the symptoms, so that iridectomy, which had been advised, was deferred. In a few days V. had risen to $\frac{6}{12}$. The tension was normal, the iris bombé had disappeared, the mediæ were transparent, and the field extended to nearly normal dimensions. The eye remained comfortable until the latter part of the following August, when the entire group of symptoms recurred. Iridectomy was then performed, resulting in complete relief and the restoration of vision to $\frac{6}{5}$. In discussing the cause of the attack Dr. Risley stated that he believed it to be due to the annular attachment of the iris to the very dense capsule during the attack of iritis accompanying the influenza in February. The fluids were thus excluded from the anterior chamber and accumulated behind the iris, causing the iris bombé which still further interfered with the excretion of the intraocular fluids.

Discussion.—Dr. de Schweinitz had seen three cases. In the first case glaucoma appeared in fifteen days after extraction of a complicated cataract. Under treatment with eserin and large doses of chloral, vision recovered to $\frac{20}{30}$, and has been retained until the present—six years. In the second case glaucoma appeared three years after perfectly successful extraction, and was attributed to prolonged reading on a very hot day. Operation was declined. The first attack was followed by others; some months later the patient had steamy cornea, pulsation of the retinal artery, cupping of the disk, and contraction of the field. Paracentesis was performed without material benefit. In the third case glaucoma appeared three weeks after extraction. Instillations of eserin and freeing of the periphery of the iris from the incarceration in the incision were followed by recovery. In all the cases the extraction was made by the combined method.

Dr. G. E. de Schweinitz described a case of *circinate retinitis*, the lesions having occurred in left eye of a woman aged 77, who in other respects was healthy. This disease manifested itself in the form of a large, somewhat wreath-shaped, slightly raised, yellowish-white deposit, which surrounded the macular region and terminated some distance beyond it. In the right eye a similar exudate occupied the macular area, but did not surround it, that is, the lesion was not circinate in character. The clinical evidences were that hemorrhages had been the antecedent condition.

Discussion.—Dr. Randall said that he had sketched a most typical case of the sort which had come under his care. It had remained unpublished for lack of the later history, as the patient had dropped out of sight. She presented a large crescentic patch beyond the macula with smaller disseminated splotches extending above and below toward the disk in the right eye, the left being unaffected. There was no albuminuria, although some of the macular lesions looked suspicious; but the patient, a woman of 65, seemed frail and needed further study.

Dr. William M. Sweet exhibited a patient suffering from *optic atrophy due to intestinal hemorrhage.* The blindness occurred six days after profuse hemorrhage from the bowels, the vision of the left eye being entirely lost, while in the right eye a small area to the temporal side of the fixing point was preserved. Ophthalmoscopic examination made three days after the hemorrhage showed moderate contraction of the retinal arteries, paleness of the optic disks with margins slightly hazy, and slight œdema of the retina, especially toward the foveal region, but no retinal hemorrhages. From the lower border of the right optic disk a ciliary artery passed toward the fovea, the preservation of some vision in this eye being probably due to the blood supply from this source.

Of the theories advanced to account for cases of post-hemorrhagic blindness, that of Westhoff and Ziegler, who believe that the ischæmia produces a fatty degeneration of the nerve fibers, would seem to explain the symptoms in many of the cases. Theobold considers that the degeneration follows a thrombosis in each central artery of the retina, the enfeebled blood current in the retinal artery being further obstructed by the intraocular tension. In this case, however, there was not the marked contraction of the retinal arteries that might be expected to follow a plugging of the main arterial supply of the retina. Ziegler's autopsy of a case, twenty days after the hemorrhage which led to the loss of vision, showed fatty degeneration of the optic nerves and their intraocular expansions, a condition which Ward Holden has shown, through experimental researches, to follow degenerative changes of the retinal ganglion cells.

Discussion.—Dr. de Schweinitz referred to the work of Ward Holden in investigating pathologic changes in this and analogous cases. He believes that the blindness was due to œdema of the retina, followed by early changes in the ganglion cells. These changes led to degeneration of the cells and fibers extending upward into the optic nerve as far as the chiasm. The symptoms in Dr. Sweet's case seem to be well explained by this theory.

Dr. Howard F. Hansell reported the results of the examination of fifty-two individuals, comprising emmetropes, hyperopes, and myopes, in the determination of the *Physiologic Variations in the Size of Mariotte's Blind Spot.* In the distance from the fixation point to the approximate center of the blind spot as projected 33 cm. there were considerable variations. In emmetropia the longest distance was 9.1 cm. and the shortest 7; in hyperopia the longest was 9.5 cm. and the shortest 7; in myopia the longest was 13.5 and the shortest 6.5 cm. In comparing the distance in the three varieties of refraction, the greatest distance and the shortest distance were found in myopia. The center of the blind spot was, with few exceptions, below the horizontal line running through the point of fixation. In hyperopia the greatest distance was 25 mm. and the shortest 2 mm.; in myopia, 19 mm. and 5 mm.; in emmetropia, 22 mm. and 2 mm. As a rule, the shape of the blind spot was oval and irregular in outline, and was independent of the refraction. The size of the blind spot was decidedly greater in myopia than in other states of refraction. Very few pairs of eyes showed equal measurement in either the distance of the blind spot from the fixation point or in its position or size, and variations as great as exist in the eyes of different individuals were found in the eyes of the same individual. Dr. Hansell concludes that the blind spot has a greater bearing in the measurement of the field of vision than has been accorded to it, and might, in the absence of a knowledge of its size, be mistaken for the scotoma of disease. The discovery that a portion of the field measuring 5 × 4 cm. of irregular outline, between the 10° and 20° mark on the perimeter, and in some cases including both, is blind, might lead to confusing conclusions as to the real character of the field.

Discussion.—Dr. Risley noted that the distance of the blind spot from the fixation point was greatest in myopia, and was led to believe that this was due to the stretching of the coats at the posterior pole. Dr. Randall said that the investigation promised value in respect to some paradoxical relations which he believed had been observed by many beside himself. While in the main the eye-ground picture corresponded with the theoretical amplification of the refracting media, giving a small disk in H. and an exaggeratedly large nerve-head in M., it was observed that the macula seemed further away, actually as well as proportionately, in H. and closer in M. It may be distant quite three diameters of the small disk from the lower outer nerve-margin in H. = 4 — 6; but little more than one diameter from the big myopic disk—a difference which cannot be merely a visual illusion, since the distance ought to be increased with the other details by the greater magnification of the media, as well as by any pathologic stretching.

HOWARD F. HANSELL,
Clerk of Section.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

The first meeting of the session was held on Oct. 19, the newly elected president, Mr. G. Anderson Critchett, being in the chair.

Mr. Critchett proceeded to deal with the *evolution of cataract extraction* since Daviel first attempted it in 1745. Prior to that time couching, or discission, were the only recognized operations. His operation was a simple extraction, and although it gained numerous adherents there were many who relied on the more primitive methods, and even as late as 1838 it was stated by Gutherie "there are reasons which will ever prevent it being practiced by the great body of the profession." The statistics, however, of cataract extractions were, notwithstanding, remarkably good.

He then proceeded to describe in detail the old flap operation. When done with skill and success it gave an excellent result, but so often a large prolapse of iris occurred, and in these preantiseptic days primary suppurations were numerous.

The dawn of a new era was foreshadowed at Moorfields when it was found that the results of one of the surgeons less skillful than his fellows, were exceptionally good. This gentleman usually accidentally did an iridectomy.

The first definite change was made by Prof. Schuft, whose efforts at reform were somewhat radical. He made a slit-like opening at the corneo-scleral junction, did a large iridectomy, and then inserted a spoon with which to remove the lens, but this often caused loss of much vitreous

Then in 1864 the president's late father read a paper at the Congress at Heidelberg on the excellent results achieved by himself and Mr. Bowman at Moorfields with linear extraction, and this led to Von Graefe introducing the knife, still used and always associated with his name. The operation he instituted had its dangers, and without great skill and care, the operator was liable to encroach on the ciliary region, and severe cyclitis and loss of vitreous were not infrequent.

Numerous modifications have been made, and the most important are associated with the names of Pagenstecher, who removed the lens with a spoon in its capsule, as also did Macnamara and Andrew, of Shrewsbury. Lebrun, of Brussels, and Pridgen Teale made a purely corneal section, but anterior synechiæ and astigmatism were frequently produced.

Bell Taylor removed a small portion of the periphery of the iris and left the pupil intact, but the difficulties of the operation were serious drawbacks to its adoption.

Förster's artificial ripening and McKeown's irrigation of the anterior chamber must also be mentioned.

Ophthalmic surgeons are now divided into two great camps. On one side are the adherents of simple extraction, while on the other are those who are loyal to iridectomy.

In spite of recent advances finality has probably not yet been reached, but in the hope that our future may be one of scientific progress, let us retain an open mind and a well balanced judgment, keeping steadily in view our final goal, the relief of human suffering.

Mr. Doyne read some notes on *Recurrent Superficial Necrosis of the*

Cornea, and also on the subject of *Radiant Heat in the Treatment of Eye Diseases.*

Mr. Lawford read notes of five cases (four males and one female). In three of the cases the evidence of syphilis was indubitable, in the other two it was open to question.

In the first case the keratitis developed 4½ months after the primary lesion, which was situated on the lower lid of the eye, whose cornea became involved. In the second case an interval of 11 months elapsed between the primary sore on the penis and the development of the keratitis. In the other three a longer period separated the primary lesion and the corneal affection.

Mr. Lawford drew attention to certain features in these and other previously recorded cases wherein they differed from the keratitis of inherited syphilis. In the acquired form the attacks of keratitis seemed to be of shorter duration and less severity, and in most instances only one eye became affected. The prognosis also seems better, as in the majority of cases complete, or almost complete, restoration of the transparency of the cornea resulted. He considered that in three of his cases there was good reason to believe that the keratitis was a syphilitic affection. In the other two he merely noted the occurrence of an interstitial keratitis in patients who had probabably had syphilis some years previously.

Mr. Lang said he recorded one such case in the transactions of the Society seven or eight years ago. In a year the cornea cleared. He thought that the application of heat was beneficial and shortened the course of the disease.

Mr. John Griffith asked whether the cases were looked upon as being a secondary or tertiary manifestation. In reply Mr. Lawford stated that he considered them both secondary and tertiary.

The following card specimens were shown :

Mr. Sidney Stephenson.—*Congenital subluxation of the lens.*

Mr. R. E. Bickerton.—*A peculiar form of affection of the choroid.*

Mr. R. W. Doyne.—*Paralysis of the muscles of both eyes.*

Major M. T. Yarr, R.A.M.C.—*Inflammatory patch in the retina* (tubercular).

The Kansas City Ophthalmological Society, November 13th elected the following as officers: Dr. F. B. Tiffany, President; Dr. LeRoy Dibble, Vice-President; Dr. F. G. Murphy, Treasurer, and Dr. F. T. Reyling, Secretary.

Dr. Murphy read a paper on the *Injurious Effects of Books on the*

Eyes. He said that the curved lines were tiresome to the eyes, as frequently the center of the page was as much as an inch nearer the eyes than the ends of the lines. It was impossible to light the curve properly, and light reflections would unavoidably enter the eyes. He advocated having the lines run parallel with the binding, so the lines would at all parts be an equal distance from the eyes, and could also be properly lighted from the side. He also suggested that it would be a great relief to the ocular muscles if the reading columns were narrower than the pupillary distance.

Dr. Burke reported a case of *partial blindness* from papillitis in a boy seven years old.

Dr. Tiffany reported a case of complete *bilateral blindness* from embolism in a man fifty years old.

Dr. Murphy reported a case of *paralysis of the right external rectus* from injury to the sixth nerve by a fall fifteen years ago in a patient nineteen years old. He had performed a tenotomy of the right internal rectus, so that the patient might hold his head straight in his efforts to obtain binocular vision.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

November 14, 1899.

Dr. Casey A. Wood presented, through the courtesy of Dr. Patillo, two cases of *methyl alcohol amaurosis* from inhalation of the poison, in which the fundus changes were well marked. In connection with these cases, he wished to point out a very curious circumstance. Until last year, cases of amblyopia or amaurosis from the use of methylated spirits were extremely rare, the first being described in 1877. He happened to write a small monograph on "The Toxic Amblyopias" in 1892-94, and was unable to find reported more than this single case in all literature.

The experience of de Schweinitz, who wrote a still larger work on the same subject in 1895, seems to have been the same. Since that time, a dozen or more cases have been described, but all of them written the past year or two.

In all the instances hitherto given, the amblyopia or amaurosis occurred from drinking the spirits, but in these cases it occurred from absorption by the lungs, mucous membranes and skin. The patients had good vision and there is no history of syphilis nor of any condition likely to produce sudden blindness. They were employed to "shellac" the interior of beer-vats in a brewery. These vats were twenty feet wide by ten feet deep, cylindrical in shape and were almost entirely inclosed. There was indeed a vent of three or four inches in diameter at the top, and a sort of man-hole partially closed by a lantern, through which the painters crept. It was subsequently shown by analysis that the shellac was not properly prepared, as it was composed of a solution containing more than 50 per cent of methyl alcohol. In addition to this the temperature in the vat was raised to about 70 degrees in order to dry the interior. These men were consequently exposed to this concentrated and hot methyl alcohol vapor for hours at a time, and it is not to be wondered, knowing as we do the poisonous qualities of wood alcohol, that they were soon affected by vertigo, nausea and general malaise. They next found upon awakening one morning that they were totally blind. Improvement in vision took place after a week or ten days, and one of them was able to get around pretty well. About two weeks after the beginning of the blindness, the visual acuity in both again sank and now amount to very little. By one patient, hand movements in one eye and fingers at about two feet are visible; by the other, fingers are seen at three feet by one eye and at eight feet by the other.

In both cases the field of vision exhibited a very decided positive scotoma, with apparently a very narrow rim of percipient retina. In one patient it was impossible to measure the field at all with the usual objects, on account of the very low vision, but by means of a faint light it was fairly well marked out. Vision now is worse than it was after the first improvement. The fundus changes in one case seem to bear out the theories of Ward Holden, who has written on this subject and examined dogs (to whom methyl alcohol was given *per orem* after anæsthesia). He believes the alterations to begin in the retina, from whence it ascends to the optic nerve that later proceeds to true atrophy. I think that this condition of things can be plainly seen in these two fundi. In one of these cases, there are certainly indications of a peri-arteritis, with macular changes and dirty, woolly disks with the edges not plainly marked.

On the other hand, as Gifford has pointed out, the clinical history plainly indicates an early optic neuritis, while the subsequent story of temporary improvement in sight, late, well-marked atrophy of the post-neuritic type makes it difficult to conclude otherwise than that the action of the poison is chiefly (probably in the first instance) upon the axial fibers of the nerve itself.

I have never seen a case in my own practice, except a very doubtful one, in which the diagnosis lay between hemorrhage into the brain and possible methylic alcohol poisoning. Here the patient presented (after a spree) precisely the same general local symptoms (with similar fundus changes) just portrayed, but there was no convincing evidence of his having drunk liquor charged with methyl alcohol.

Discussion.—Dr. F. C. Hotz: These cases were in his clinic last week. They are especially interesting, because the methyl alcohol was introduced into the circulation through the lungs, not through the stomach. He believes they are the first observations of this kind brought to our notice. At least, among the small number on record of toxic amblyopias due to wood alcohol, there is none in which the intoxication was caused by inhaling the alcohol. A day or two after the occurrence of blindness, both patients had been put under the care of Dr. Welcker, who found marked optic neuritis in both cases; that the blindness was complete when he first saw them; then the sight returned to a certain degree, but gradually grew worse again. If Dr. Holden's views were correct, that wood alcohol primarily affects and directly destroys the retinal elements, it would be difficult to account for this temporary recovery of sight, for the perceptive elements once destroyed make the return of sight impossible. While, on the other hand, we can well understand that a violent inflammation of the connective tissue of the optic nerve may interrupt by pressure the conduction of visual perceptions so completely as to cause total blindness during the heights of inflammation, and yet vision may return when the inflammation subsides and the nerve fibers are released from the paralyzing pressure of the swollen connective tissue. But as the neuritis is always followed by more or less shrinkage of the tissues, causing atrophy of the nerve fibers, the vision gained is gradually lost again. Clinical facts, therefore, do not sustain Dr. Holden's views, but rather prove that wood alcohol exerts its injurious effects primarily upon the optic nerves.

Dr. J. Elliott Colburn saw a similar case last April. The man was cleaning some old furniture in one of our large office buildings, where they were desirous of keeping the fumes from spreading over the building. He used the alcohol quite freely, and after five or six days he noticed that his vision was beginning to fail. A day or two afterward he called at Dr. Colburn's office. He had a very low vision, and presented a picture of a very severe double neuritis, attended by considerable pain. He also complained of pain in the arm whilst using the alcohol. The appearance was that of a typical neuritis.

During the month of May, Dr. Colburn had occasion to do some cleaning of old furniture, and used wood alcohol. He experienced pains in his hand and arm. He thought that it might be due to the unusual work, but after much more difficult labor, he did not experience the pain ; furthermore, upon using the alcohol again, he experienced the same discomfort.

Dr. Henry Gradle thinks that these two cases of methyl alcohol poisoning plainly show that the trouble is a post-neuritic atrophy. On rather cursory examination the retina seems to present a lessened transparency in its central area.

Dr. H. Gradle opened a discussion on the *relationship of ocular and orbital diseases to affections of the nose and its sinuses.* His experience led him to criticise some of the communications on this subject as too generalizing. He maintained, however, that although the nasal etiology is not as common as some maintain, there are certain definite instances in which various orbital and ocular troubles occur as complications or extensions of nasal diseases, which point was illustrated by a number of clinical records.

Discussion.—Dr. Thomas Faith has in a number of instances noticed the appearance of a temporary ciliary injection, with considerable pain in the eye and tenderness in the ciliary region, occasionally accompanied by a hyperemia of the iris, and in one case amounting to mild iritis, following deep linear cauterization of the inferior turbinal body. The pain, as the patients expressed it, was like a severe toothache extending into the eye. The symptoms passed off in from twenty-four to forty-eight hours without necessitating any treatment except in the case of iritis, which subsided in about eight or ten days under the influence of atropin.

In another case which he chanced to see in the practice of a friend, a case of one-sided atrophic rhinitis following complete removal of the middle and inferior turbinal bodies, the cornea on the same side became opaque and degenerated in spite of anything that could be done. The absence of any other traceable cause, and the appearance of the eye symptoms at the same time as the beginning atrophy in the nose, seem to point to the nasal trouble as the cause.

He has been led to believe that in all probability the changes which take place are trophic in character. The mucous membrane of the nose is supplied by branches of the fifth pair of cranial nerves, as is the cornea and anterior part of the eye in general, and the changes which occur in the eye after division of the fifth are marked and characteristic of trophic changes, as well as loss of sensibility to cornea, iris, and ciliary region.

In animals, where division of the fifth nerve has been made for purpose of physiological experiment, changes occurred in the cornea even when it was protected by closing the eye, or oiled with an ointment.

The cornea became completely opaque, followed by a gradual degeneration, which sometimes extended to the interior of the eye.

He thinks the changes in these cases have reference to the nerve distribution; the changes in the nose affecting the nerves in that organ, from there extending to and affecting the branches which supply the eye, and particularly in the case last mentioned, amounting to a pure trophoneurosis.

Presentation of cases by Dr. William H. Wilder. The first case was one which Dr. Wilder presented to the society last spring. A young man 17 years of age came to the infirmary, stating that about two or three weeks prior to his admission the sight of the right eye began failing rapidly. Family history is negative. He has never had any venereal disease. Vision of the left eye was normal, while that of the right eye was reduced to $\frac{10}{200}$. A little to the lower and the outer side of the optic disk is an elevation, evidently choroid, which at the time of his entrance showed distinct pigmentation. This is now gradually disappearing, although the size of the little mass is not decreasing. There is a little vessel, the inferior temporal branch, which passes directly over this elevation, so that we undoubtedly have here some sort of a tumor in the choroid. The size of this little mass is approximately one millimeter. Just below this little mass is a slight hemorrhage. About two weeks ago there were several hemorrhages below the optic disk in the choroid. Within the last two days a few small punctate spots have appeared around the macular region. Whether or not this is a sarcomatous growth remains to be seen. He has been taking potassium iodide, although there is no evidence of specific disease. His field is interesting. There is a distinct scotoma, which is really an enlargement of the physiological blind spot, and this has varied somewhat. It is not so large as it was when he entered the infirmary. The size of the scotoma seems to be diminishing below. Some of the hemorrhages first observed have been absorbed.

Dr. Wilder has never been able to observe the growth of a sarcoma of the choroid from the beginning, and is somewhat skeptical of his first idea of its being a sarcoma, as there seems to be an apparent absorption of the growth; at least the pigment has disappeared.

The next case is a young man 23 years old, who came to the infirmary a few days ago. He has always been perfectly healthy. Vision of the right eye is 21/160, that of the left 22/100. Everything about the eyes and fundus seems to be normal, with the exception of scattered white disks around the region of the macula lutea, distinctly in the choroid. The spots vary in size, the largest being about the size of the head of a pin, and they are very discrete, more numerous in the right eye than in the left. It reminds one very much of pictures of Tay's choroiditis, an extremely uncommon occurrence. One might expect a tuberculosis, but these spots do not seem as large as those present in tuberculosis, and, furthermore, there is no tubercular history in this case. His parents, brothers and sisters are all living and well.

The third case was presented here last spring. He is an ophthalmological and pathological museum. He has a detached retina, a dacryo-cystitis, and a cataract (this latter is evidently of traumatic origin), and the whole lens is visible. There is no iris to be seen. The lens was not dislocated into the anterior chamber, which was apparently of normal depth. There was an apparent aniridia. Dr. Wilder endeavored to remove the lens by operation, but the vitreous was so fluid that there was a great escape of it, and the patient subsequently developed such a severe pain that it was necessary to enucleate the eye. At some future time the microscopical specimens of this case will be presented to the society.

THE OPTICAL SCIENCE OF A PRESIDENT OF AN OPTICAL COLLEGE.—To Dr. David W. Stevenson, of Richmond, Ind., the profession is greatly indebted for a discovery of no inconsiderable value. He has discovered a rare book, entitled "Optical Truths," by Chas. McCormick, M.D., president of McCormick Optical College, 84 Adams Street, Chicago. This book, Dr. Stevenson says, was reviewed favorably by an "optical" journal, and was recommended to him by wholesale opticians "as the coming book on optics." From the selections given by Dr. Stevenson in his article ("Sample Misstatements in a Book of Opticians," *American Journal of Ophthalmology*, May, 1899), we have a valuable addition to the growing list of additions or contributions to science as she is taught by ignoramuses. When spurred by avarice, the impertinence of ignorance becomes unconsciously humorous, and our professional life is so serious that we must be highly grateful for anything contributing to the gayety of nations, especially if it illustrates the truth that the quack opticians who wish to supplant medical men in the field of ophthalmology should not begin by an ignorance of optics and physiology so great as to advertise their incapacity to boobies and first-form schoolboys. We hope the first edition of "Doctor" McCormick's unique book may not be exhausted before we secure a copy.—*Philadelphia Medical Journal.*

NEWS ITEMS.

Personals and items of interest should be sent to
Dr. Frank Allport, 92 State St., Chicago.

YALE COLLEGE boasts a blind law student.

DR. ALBERT B. HALE, of Chicago, has removed his residence to 6626 Monroe Avenue. His office remains as heretofore, at 103 State Street.

DR. WILLIAM L. NOBLE was married November 1st, to Miss Marion Holden, of Chicago.

DR. FILIPPO NATTINI has been appointed privat-docent of ophthalmology at Genoa.

DR. JOSEPH ROHMER has been made professor of clinical ophthalmology at Nancy.

DR. S. D. RISLEY, of Philadelphia, has removed his offices from 1722 Walnut Street to 1824 Chestnut Street.

DR. J. COLLINS WARREN, president of the board of managers of the Massachusetts Eye and Ear Infirmary, Boston, has resigned.

THE number of children in the New York Institution for the Blind at the end of the fiscal year just closed was 169, a decrease from the previous year.

THE trustees of the New York Eye and Ear Infirmary have decided to erect a pavilion for contagious eye diseases on property adjoining the infirmary.

DR. JAMES MOORES BALL was elected president of the St. Louis Academy of Medical and Surgical Sciences, which held its annual meeting November 7, 1899.

There is a man in New York who fell in love and got married while he was blind. After twenty-six years his eyes were operated on, and he was able to see his wife for the first time. The wonderful part of it is that he showed no disappointment.

It has been computed that one person in every eight hundred is blind to the X-rays—that is to say, when looking through the fluoroscope they are utterly unable to observe the bones of the body, coins, or any other object which is clearly distinguishable by the ordinary observer.

An International Congress for the Amelioration of the Condition of the Blind is to be held in Paris, August 1 to 5, 1900. For particulars address the secretary-general, Maurice de Sizeranae, Avenue de Breteuil, 31, Paris.

G. P. Putnam's Sons announce that they did not find it practicable to issue No. 5 in the present volume of the Archives of Otology, in October. They have therefore planned to make the December issue a double number, and subscribers can depend upon this number reaching them early in that month.

The improvements at the Baltimore Presbyterian Eye, Ear, and Throat Hospital have been completed. A two-story dispensary has been erected in the rear. The old dispensary has been turned into wards, which have been furnished by Mrs. Joseph Rieman, in memory of her late husband.

Announcement is made that the *Journal of Eye, Ear, and Throat Diseases*, published by the medical staff of the Baltimore Presbyterian Eye, Ear, and Throat Charity Hospital, will hereafter appear as a bimonthly instead of quarterly as heretofore.

Jocos recommends for the quick maturation of a cataractous lens the introduction of a hypodermic syringe into the anterior chamber. Some aqueous fluid is sucked up into the syringe, which is then forced into the lens. He claims that the lens may be completely removed after the fifth day.

John G. Whittier's Color-Blindness.—The Boston *Transcript* prints a letter from Robert L. Rantoul to the Whittier Club, in which he said: "Mr. Whittier told me the story of discovering his color-blindness, when his mother had taken him out to pick wild strawberries, and he could find none. He told me of the embarrassment this limitation had caused him through life lest in describing flowers so freely as he had done in his poems he might sometimes go wrong as to the coloring."

THE evils of overwork have claimed, in the case of school children, the attention of the Swiss officials. In the Canton of Luzerne the provision is that no lessons shall be studied at home, and that only moderate tasks be required in the secondary schools. Ten minutes' recesses every half-hour are called for, and a week's vacation every six or seven weeks. Attendance at school is not to begin before the age of seven years.

MR. ANDERSON CRITCHETT, the new president of the Ophthalmological Society of London, gave an address at the opening meeting of the session, in which he paid a tribute to his predecessors. He also expressed the regret he felt that his honored father had not lived to occupy the chair. That feeling is natural to the members of the society, but George Critchett's fame is world-wide, and to those who knew him his memory is dear as a man, while as one of the great pioneers of ophthalmology his name is deeply engraved on the history of the specialty. That specialty is well to the fore now—Anderson Critchett president of one society, and his colleague, Mr. Juler, of another, the Harveian.

DR. CASEY WOOD, in charge of the department of Italian ophthalmic literature in the *Annals of Ophthalmology*, has arranged with Professor Guaita and Dr. Bardelli, of the *Annali di Ottalmologia*, for the simultaneous publication of such articles as may be agreed upon in both these journals. The modern school of ophthalmology in Italy is a very active and influential one, and we are sure the readers of the *Annals* will greatly benefit by this arrangement. We draw attention to the first of these articles in the present number, entitled "The Use of Cocain in Measuring the Amount of Heterophoria."—*Annals of Ophthalmology*.

THE last volume of Norris & Oliver's "System of Diseases of the Eye" is out, and treats of the "Motor Apparatus, Cornea, Lens, Refraction, Medical Ophthalmology," etc. The writers of this volume are Landolt, Nuel, Norris, Oliver, Haab, Swanzy, Lawford, Story, Fernandez, Parinaud, Hutchinson, Standish, de Schweinitz, Salzmann, Baudry, and Gayet.

This volume completes the most notable text-book on diseases of the eye in the English language, and no ophthalmologist who even pretends to keep up with the times can afford to be without this magnificent collection of ophthalmological knowledge on his shelves. It will probably be many years before a similar book of equal importance will be published.

GROWTH OF THE BOSTON EYE AND EAR INFIRMARY.—In thirty years the number of new patients treated in the Boston Eye and Ear Infirmary has increased nearly fivefold, and the number of operations over thirteen-fold. The record stands:

Whole number of patients in 1868, 4,448; in 1878, 9,465; in 1888, 13,140; in 1898, 20,929. Number of operations: In 1868, 283; in 1878, 379; in 1888, 3,140; in 1898, 3,718. The operations for cataract in 1868 were 68; in 1878, 76; in 1888, 129; in 1898, 140. Even the out-patient department draws almost as many patients from Massachusetts outside of Boston as from that city. Last year Boston furnished 10,709, and the other towns in the state 9,933. The ophthalmic department is much larger than the aural. In the eye wards there were 1,096 patients, and out-patients numbered 15,486. In the ear wards the number stood at 324, and out-patients were 5,443. During the year 1898, seventeen donations and bequests were received, aggregating the handsome fund of $110,000.—*Annals of Ophthalmology.*

BLAKE discusses the elimination of the pecuniarily unfit from the hospital dispensary. At the Massachusetts Charitable Eye and Ear Infirmary all suspicious cases are referred by the physicians to the executive office, and it has been proposed to have a special clerk in the dispensary for the purpose of questioning those who seem able to pay. All suspected patients are required to sign a paper in which they state that they require charity. Blake calls attention to the fact that so many different methods are employed that there is no uniformity or regularity in hospital procedure, and therefore suggests that a bureau or clearing-house be established in each large city by all the hospitals acting together, where suspected cases could be thoroughly investigated (J. S.).—*Philadelphia Medical Journal*, September 2, 1899.

ROBERT GERLACH, a resident of Sag Harbor, L. I., may lose his left eye as the penalty for his too great confidence in a bird of which he tried to make a pet. The bird, known as a "pile driver," is about the size of a crow, and possesses a long, slender bill. Gerlach purchased it of a sportsman, who had broken its wing. After obtaining it he tied the bird to his waist by a string and set it upon his shoulder. The pile driver, unappreciative of the confidence it received from its new owner, darted out its long bill with lightning-like rapidity, striking Gerlach's left eye and inflicting a dangerous wound. Dr. C. E. Wells regards the prospects of saving the wounded eye as doubtful. The pile driver was killed.

(The news editor desires to say that incidents of this kind are not uncommon. There are some birds who live upon other birds and fishes, and before killing them, they render them powerless by picking out their eyes. It is very likely this instinct caused the above accident. The news editor remembers having seen a case once where a crane picked the eye of a patient, rendering enucleation necessary. It does not do to be on too familiar terms with birds possessing this disastrous instinct.)

A VERY interesting discussion took place in the Section of Ophthalmology of the British Medical Association at its last meeting upon Sympathetic Ophthalmitis. The discussion was participated in by Landolt, Krauss, McHardy, Caley, Marshall, de Schweinitz, Reeve, Bronner and Hern.

Notwithstanding the diversity of opinions concerning the enucleation of eyes suffering from sympathetic ophthalmitis, there seemed to be a singular unanimity of sentiment concerning the proper course to be pursued, by not only the essayist Mr. Cross, but also by the gentlemen who discussed his paper. The sentiment was unmistakably against the retention of dangerous eyeballs or the hopeless efforts sometimes made to save them to the detriment of the other. With regard to the pathology of sympathetic cases, the speakers all seemed to agree that neither the microbic theory nor that of reflex neurosis was definitely proved. There was a possibility that when scientific investigation was more perfect various kinds of microbes might be found implicating, if not actually causing, sympathetic complications. It seemed to Mr. Cross necessary to work carefully in the direction of seeing how far any general infection of the system (blood or organs was present where septic uveitis had been developed in the sympathizing eye.

LES VERRES ISOMÉTROPES, PAR LE DR. DE BOURGON, MALOINE, 1899. —This monograph is a treatise on the physical and optical properties of spectacle lenses made of a new glass, of secret composition, devised and patented by Mantois, who for some reason unexplained has named it isometric. A year ago these lenses were put on the market by la Maison

Fischer, Paris, and they have been favorably reported on by several oculists and exploited in the lay press. The advantages of the new glass over the crown glass commonly used in spectacle lenses are, first, that it is more homogeneous, limpid, and transparent; and, second, that it is harder and of higher refractive index, so that for a lens of given focus the curvature is less, and there is consequently less spherical aberration. On the other hand, the disadvantages of the new glass are its great dispersion and its excessive chromatic aberration, which render strong lenses of this composition useless. Pebble lenses, while hard and beautifully transparent, must be cut in a certain relation to the axis of the crystal in order to be satisfactory. The most singular property of the new glass is its impenetrability to the Roentgen rays, and while lenses of pebble or of crown glass, even though tinted, come out pale in a skiagraph, the isometropic lens comes out quite black. By thus cutting off the Roentgen and ultra-violet rays, the author states that the wearing of plane isometropic glasses alone has sufficed to relieve retinal asthenopia in several patients.

The treatise is very complete, and the author seems to have considered every aspect of his subject.—*New York Medical Record*, July 22, 1899.

Opticians Protest.—The Optical Society of the State of New York met in executive session on Tuesday, June 27, at the Fifth Avenue Hotel. The principal object of the meeting was to perfect the affiliation of the various local societies throughout the State into a general state body, the principal affiliating societies being those of New York City, Syracuse, Rochester, and Buffalo. At the same time there was a warm discussion of the recent action of the American Medical Association at the Columbus meeting (published in the Journal) and of the American Institute of Homeopathy at Atlantic City. The Columbus resolution was introduced by Dr. J. L. Lautenbach, of Philadelphia, and is to the following effect:

"*Resolved*, That it is the opinion of the American Medical Association that opticians are not qualified by their training, nor are they legally qualified, to perform the work of the oculist, and they should not be the consultants of regular physicians. Further, it is resolved that all physicians are requested to call their brother physicians in consultation, thus discountenancing the growing pretenses or assurances of the optician, and his brother, the graduate optician, or, as he is now beginning to call himself, the 'ophthalmotrician.'"

The resolution of the Optical Society reads that "the society views with regret the unprofessional and unscientific attitude of those medical societies in adjacent States who are led by designing eye-specialists to adopt resolutions tending toward the estrangement of opticians and physicians. This society believes that the honorable occupation of an optician entitles him to the same courteous consideration at the hands of medical men as that now accorded to those following dentistry and other mechanico-scientific callings." While the Optical Society took this action in relation to the limitation of their trade at the upper end, no consideration was given to the encroachments at the lower limit, where the greater amount of harm accrues to the users of aids to vision. Of eight department stores in New York chosen at random in the busiest retail shopping-district, six conduct an optical department, three of which advertise the services of graduate opticians. At any of the six establishments spectacles may be bought over the counter at the choice of the customer, one number after another being tried until a fit is found. Practically the only difference between the stores which have opticians and those which have not is to be found in the presence on the counter of more or less imposing mechanical test appliances which are seldom used. The glasses most commonly sold are those for simple myopia or simple presbyopia. Cases of astigmatism by itself or complicated with lens-deformity are met with the statement that the stock of that kind of glass has just been sold out and a cautious recommendation to some eye-clinic. On the day that the Optical Society was protesting against the action of the medical societies an actual count along four blocks of Fulton Street and the two adjacent blocks on Broadway showed nine venders of glasses whose stock was carried in barrows or boxes slung by a strap around the neck. These venders carried only a single line of glasses, those for "old sight." A tenth vender was omitted from the count because he dealt only in smoked and tinted glasses without refracting qualities.—*Philadelphia Medical Journal*, July 8, 1899.

THE Thirteenth International Congress of Medicine meets in Paris from the 2d to the 9th of August, 1900. The American national committee has for its president Dr. William Osler, and for its secretary Dr. Henry Barton Jacobs, of No. 3 West Franklin Street, Baltimore, Md. Dr. O. F. Wadsworth will especially represent the ophthalmological section, and Dr. H. G. Miller the otological section. Those desiring to become members of this congress should write to Dr. Jacobs for an application blank, which must be filled out and returned, together with five dollars and a visiting card, to Dr. Jacobs. In due time cards of membership will be issued to accepted members from Paris. Members desiring to present papers will forward the title and synopsis of the paper before May 1, 1900, to the secretary of the section to which they belong, for each sectional committee reserves to itself the right of drawing up its own working program. Papers are limited to fifteen minutes. It is much desired that many Americans will become members of this congress, so that our country mny be suitably represented. The fee for membership will entitle a member to receive a digest of the full proceedings of the congress, and the printed report of the section to which he belongs. This alone should be worth the price of admission. Should anyone become a member and desire such reports, he should send such a request in writing to M. Masson, publisher of the proceedings of the congress, 120 Boulevard St. Germain, Paris.

The sections of ophthalmology, otology, laryngology and rhinology will come under the general headings of the surgical sciences. The secretary of the section of ophthalmology is M. Parent, 26 Avenue de l'Opéra, French. The secretary of the section of otology is M. Castex, 30 Avenue de Messine, Paris. The secretary of the section of laryngology and rhinology is M. Lermoyez, 20 bis, Rue La Boëtie, Paris.

Those desiring to become members should request Dr. Jacobs to send them a copy of the rules and regulations, which is printed in English and in Paris. The French language is adopted as the official language of the congress in the international relations. In the general assemblies, likewise in the sectional meetings, the German, English and French languages may be employed.

The general president of the section of ophthalmology is Professor Panas of Paris; the vice-presidents are Javal of Paris and Gayet of Lyons; the secretary is Parent of Paris, whose name and address have already been given; the assistant secretaries are Chevalereau and Rochon Duvigneaud, both of Paris. Members of the executive committee are Abadie of Paris, Badal of Bordeaux, Bruch of Algiers, Chauvel of Paris, Chibert of Clermont-Ferrand, Dor of Lyons, Hocquard of Paris, Jacos of Paris, Lagrange of Bordeau, Landolt of Paris, de Lapersoune of Lille, Meyer of Paris, Rohmer of Nancy, Terson of Paris, Trousseau of Paris, and Trug of Montpelier.

The leading papers are three in number:

1. "Optics Neuritides of an Infectious and of a Toxic Origin," by Bellannuroff of St. Petersburg, Nuel of Liége, Uhthoff of Breslau.

2. "The Cortical Center of Vision," by Bernheimer of Vienna, Angelucci of Palermo, Henschen of Upsala.

3. "The Comparative Value of Enucleation and of the Operations

Suggested to Replace It," by Pflüger of Berne, Snellen of Utrecht, R. H. Swanzy of Dublin, and von Schweinitz of Philadelphia. It will be noticed that our distinguished friend, George de Schweinitz, is no other than the Teutonic *von* Schweinitz whose name graces the program of ophthalmology.

THE TRANSFERENCE OF TACTILE SENSATIONS INTO VISUAL ONES.—Dr. Frank R. Fry (*Journal of Nervous and Mental Disease*, August) recently related to the American Neurological Association the following very interesting case. He said that the subject was a hysterical girl, aged fourteen years, who before the time that his examinations were made, in January, February, and March, 1898, had been under the observation of Dr. George M. Tuttle, who felt secure in a diagnosis of ulcer of the stomach on account of hemorrhage, pains, etc., in fact, typical symptoms with subsequent exhaustion. In this exhausted condition she had repeated attacks of delirium, alternating with more quiet hallucinatory states. She had frequently hemiopic hallucination and monocular diplopia. Soon after coming under the author's observation there appeared a complete anæsthesia and paralysis of the whole right side. She was anæsthetic to touch, temperature, and pain tests made in the usual way.

Dr. Fry had no difficulty in reproducing the Binet experiments in this girl. He directed her to look at the wall (a plain white surface) on the left side of her bed, and to tell him what kind of *objects* she saw there. He then traced on the anæsthetic (right) arm and forearm various simple geometrical figures: triangles, squares, circles, etc. She saw them distinctly on the wall, naming them without hesitation from the first. Letters and numerals carefully traced were recognized in the same way. The tracings were lightly made with the finger-nail or an ordinary lead pencil not much sharpened. When directed to look at a colored screen during the tracing she always saw the figures surrounded by the color complementary to the one before her—*i. e.*, while looking at the blue screen she saw the figures in a red (orange?) field, and vice versa. Only blue and red screens were used, but other tests revealed a perversion of color perception.

Simple objects placed in the anæsthetic hand, and the hand closed upon them, were seen upon the screen—*e. g.*, an opened match-box. A silver dollar was recognized as a disk. A handkerchief was tied about the wrist. She immediately announced on the screen "a dark arm and hand with a dark cloth tied around it." Other tests quite as interesting were made, serving to draw attention to an interesting hysterical phenomenon —namely, that while the subject could not recognize in the ordinary way certain sensory impressions (tactile), she could interpret them by the aid of another sensory function (visual). The author says that the experiment of transferring by suggestion a hysterical anæsthetic from one area to another is a familiar one. What he had just described is similar, but it is not exactly parallel. In the latter case a more complicated psychic process takes place.

Dr. Fry said that it might not be out of place to state that great care was used in conducting these experiments. The nurse was carefully cautioned; and only she and persons who understood the necessity of caution were admitted to the room when the examinations were being made. The patient never knew at any time that the tracings were made upon the arm, or that this member was used in any way in the process. She was curious to understand how the pictures were produced. She constantly besought the nurse for an explanation, who finally told her that a small magic lantern was used for the purpose. She then frequently asked me when I would allow her to see the lantern. She was an intelligent and tractable child, a very good subject for this kind of work.

Dr. H. Hermann, Dr. Given Campbell, and Dr. M. A. Bliss, all familiar with neurological work, witnessed the examinations. Subsequently the patient was under the care of Dr. E. G. Runge at the City Insane Asylum.

TREATMENT OF TRACHOMA BY THE EXCISION OF THE CONJUNCTIVAL CUL-DE-SAC—GALEZOWSKI.—This form of treatment has been found successful in cases which have resisted all other measures. Three important points: 1. The excised portion must include only the conjunctiva. 2. The incision must be prolonged as far as possible toward the angle of the eye. 3. It must not include the tarsus. After cocainization or general anæsthesia, the upper lid is everted and one of the arms of the author's double forceps is introduced beneath it; the conjunctiva is seized and drawn away from the tarsus. It is then dissected back of the forceps the whole length of the lid, then drawn forward, the portion held by the forceps cut off and the eye closed. An ice-bag is applied and a carbolized collyrium used, cicatrization resulting in a few days.—*Recueil D'Ophtalmologie.*

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The Ophthalmic record

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